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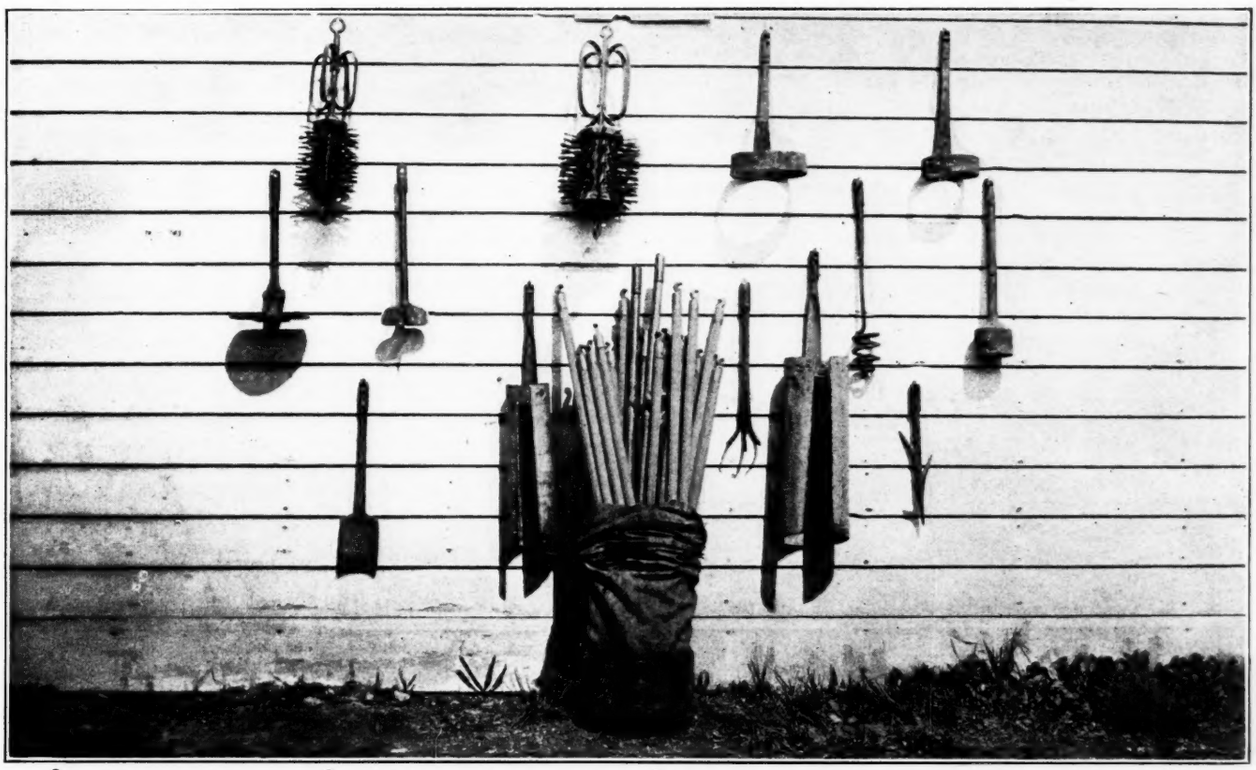


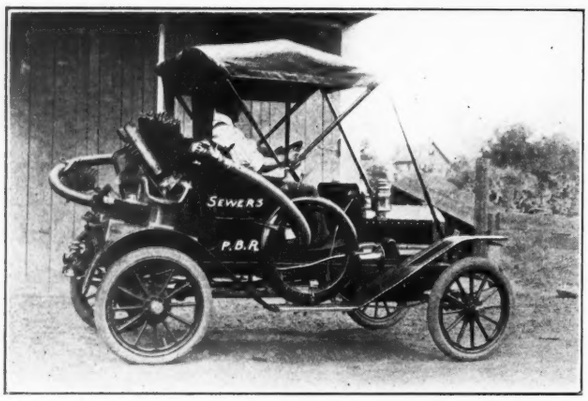
SEWER CLEANING BRUSHES, ROOT CUTTER, CLAY CUTTER, CLAW, RODS AND OTHER APPLIANCES

SEWER MAINTENANCE IN RICHMOND BOROUGH

Gasoline Pump for Emptying Catch Basins and Stopped Sewers — Jointed Rods and Tools Used Thereon — Claws, Root Cutters, Sand Scoops, Barbed Spears—Cost of Cleaning—Concrete Catch Basins

THE Borough of Richmond, one of the boroughs of Greater New York, is an island having a maximum width of about seven miles and a maximum length of about fourteen miles. This is not solidly built up by any means, but there are a number of communities, mostly scattered along the shore of the island; the largest of which is St. George, New Brighton and Tompkinsville, which form practically one continuous settlement. Over a large part of the island, however, the houses or groups of houses are more or less scattered.

At present there are in the borough between 15 and 20 miles of combined sewers and about 65 miles of sanitary sewers. The surface water reaches the combined sewers through catch basins which are scattered quite generally over the sewered area. The maintenance of the sewers, including the cleaning of catch basins, is in charge of the Bureau of Sewers, the superintendent of which is Ernest H. Seehusen. The Bureau uses in maintenance work two steel dump carts, a one-horse supply wagon, an auto emergency wagon and a pumping outfit for pumping out catch basins. In addition there are used a number of small appliances for cleaning out sewers and a Stewart sewer-cleaning machine. It also is provided with about 2000 feet of 2½-inch rubber hose and a large number of minor appliances, such as



EMERGENCY CAR CARRYING TOOLS

buckets, shovels and scoops, and tools and supplies of various kinds which are kept in a store-room at the yard.

The house sewers of the separate system were designed and constructed with the idea of using automatic flush tanks at the upper end of each line. For the past year or two, however, none of these flush tanks has been in use, since the water company, on account of the scarcity of water, will not permit any to be used in the flush tanks; nor for flushing the sewers except in emergencies. This makes it necessary to adopt methods for removing stoppages in the sewers entirely independent of the use of water, except such as may be flowing in the sewer itself.

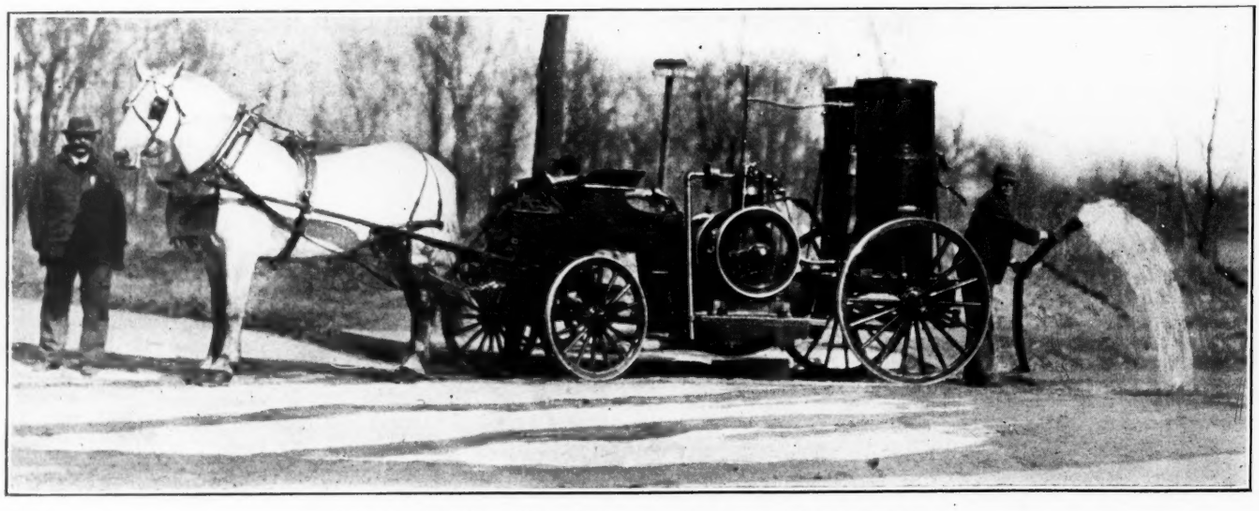
Up to about two years ago all basins were cleaned by the ordinary method of bailing the water out with a bucket and shoveling the dirt out with scoops. About that time, however, Mr. Seehusen had constructed for the Bureau a portable pumping plant, which is now used for pumping out basins and also for emptying sewers when they are stopped up. This consists of a 5-h.p. Fairbanks gasoline engine and a centrifugal pump mounted upon a low-hung frame carried on four wheels. In addition there are in the rear two water tanks which are kept filled with water, one for cooling purposes and one for priming the pump. These two tanks filled with water add very considerably to the weight of the apparatus and it is Mr. Seehusen's aim to obtain another outfit in which these will not be necessary. The suction pipe from the pump is of flexible metallic hose rather than the ordinary rubber suction, the metallic pipe being both lighter and more flexible. The suction at the bottom is covered with a wire basket to keep out large materials which might stop up the pump. The pump discharges through a fire hose, the water being carried to the nearest creek or discharged into a gutter or vacant lot. It has a capacity of 200 gallons a minute when discharging through two or three lengths of hose. Ordinarily the dirt in the bottom of the basin is kept stirred up during pumping and is practically all removed by the pump. It is the practice to empty all the basins in regular order, making several visits to each basin each year; although in the case of a flood or stoppage, of course, the basin would be cleaned out of its routine. The latest published report shows that during the year covered there were 10,339 basins cleaned at an average cost of about $1.176 per basin.

CORNER OF YARD. HOSE-DRYING TOWER

OLD METHOD OF EMPTYING CATCH BASINS

The hose used in connection with this pump, and for flushing sewers when this is permitted, is given more care than is ordinarily accorded to hose used by sewer departments, as it is always drained after use, being suspended in a hose tower constructed for this purpose at the yard. Mr. Seehusen believes that the life of the hose is at least trebled by drying it in the tower instead of storing it away wet.

When a small sewer is stopped up the pumping appliance is first used for removing the sewage above the stoppage, if this should be necessary; and various appliances are then employed for removing the stoppage itself. That most commonly used is the ordinary jointed sewer rod, the Felton rods being used.

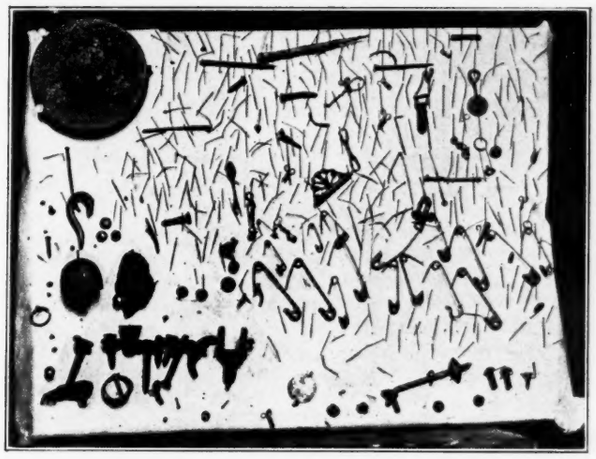


GASOLINE PUMPING PLANT EMPTYING A CATCH BASIN

One hundred feet or more of these are kept in a bag for emergency use; but a set after being used is dried and placed in a can containing machine oil, where it is allowed to soak thoroughly. It is believed that by this means the life of the rods is very considerably lengthened. It is not thought desirable, however, to merely dislodge the matters which have caused the obstruction or added to it, merely to have them settle again lower down in the sewer; but an effort is made to remove them entirely. For this purpose the Bureau uses a number of appliances which may be attached to the end of the jointed rod. One of these is in the nature of a claw of three or four hooks by which cloth, pieces of wood, etc., may be drawn back to the manhole. Where an obstruction rises to any height above the invert, however, the claw can not be lifted up to catch it and another appliance having the general form of a large corkscrew is used and is screwed into the obstacle. For much the same purpose there is used a pointed steel bar with several barbs on its sides, the point at the end being sharp. This can be jabbed into the harder materials like wood, the barbs tending to keep it from being pulled out. Another contrivance is a clay cutter, which is simply two cutting edges arranged in the form of a cross and fastened to the end of a steel rod, these cutting edges being used to chop up clay into small pieces which can be removed by scrapers or other appliances. For cutting roots two appliances are used. Where only a small root is protruding from a joint a spiral spring of flat steel sharpened on the edges is drawn through the sewer, these edges cutting off the small roots. In case of a larger root a heavy ring or short cylinder of steel, which is sharpened on its forward edge and fastened to a rod, is used very much like a chisel for cutting off the root. Sand and similar light material are removed by a light sheet iron tube provided with a diaphram at about mid-length, thus practically forming two cans with their bottoms together. This is provided with a rope or chain at each end and is drawn into the sewer, when the forward can is filled with sand, and is then drawn back again when the other can picks up sand which was not scraped up in the first instance; that is, one can picks up the sand while being drawn in one direction and the other while being removed in the opposite direction.

During the year of the latest report the Bureau cleaned 88,136 lineal feet of sewer at an average cost of 1.1 cents per foot; but this included all kinds of cleaning, much of it being merely flushing. During the same year there were cleaned 1,387 manholes at an average cost of 25.3 cents per manhole and 47,965 feet of culverts, drains, etc., at an average cost of 4½ cents per foot. In all of the prices in this description only the labor charges are given, nothing being allowed for foremen or inspectors or overhead charges. The cost of supervision by foremen and inspectors was about 20 per cent. of the total cost of labor.

POPLAR ROOT MASS 84 FEET LONG REMOVED FROM SEWER



TAKEN FROM A SEWER STOPPAGE BELOW A HOSPITAL

The Bureau also does such repairing as is necessary, having repaired, during the year in question, 123 basins, 97 manholes, 58 flush tanks, 167 lineal feet of sewers and 1,411 lineal feet of culverts, drains, etc.

At the present time a considerable number of street inlets are being reconstructed, both the material and the design being considerably changed. The new basins are constructed of concrete in which there are used, for coarse and fine aggregate, crushed cinders from the refuse incinerating plant. This concrete is mixed one cement, 4 fine aggregate and 2 coarse aggregate. The greater amount of finer aggregate is thought desirable because of the large size of the coarse aggregate, which is passed through a 2½-inch screen, and also because of its honeycombed surface, which absorbs a considerable amount of mortar. The basin is made in the form of a cylinder 4 feet interior diameter and 7 feet deep. In constructing these cylinders Blaw forms are used and are said to greatly facilitate the work. Expanded metal is used for reinforcing the cylinder and also the concrete sidewalk paving which is constructed as a top to the cylinder. The inlet openings are not placed directly at the corner, but are located a little distance from the corner on one or both streets, so as to be above the cross walk. The gutter in front of the opening is depressed about 6 inches, the drop being made by steps each of about one inch rise in the case of brick or block pavement. This opening is connected by a channel with the basin, this channel having the concrete sidewalk slab for its roof and side walls and bottom of concrete. Where a large amount of water is to be provided for, two such openings and channels are provided side by side.

BALTIMORE SEWER WORK

DURING the year ending December 31, 1910, the Sewerage Commission of Baltimore, Md., built by contract 0.41 miles of brick and concrete sewers, 34.78 miles of vitrified clay pipe sewer, 0.14 miles of iron pipe sewer and 0.42 miles of combined reinforced concrete and brick; a total of 35.75 miles, for house sewage only. For surface water only it built 0.73 miles of brick and concrete sewers and 1.3 miles of vitrified pipe sewers. When building the former it carries house connections to the property line, and during the year laid 70,800 feet of such connections, most of them of 6-inch pipe, although a few of them were 8-inch. Up to 1911 the Commission had constructed for house sewage only 10.21 miles of brick and concrete sewers, 62.25 of vitrified pipe sewers, 1.99 of iron pipe sewer and 1.60 of reinforced concrete and brick sewers; and for surface water only 0.78 miles of brick sewer, 5.1 of brick and concrete, 0.28 of reinforced concrete, 16.6 of vitrified pipe, 2.64 of reinforced concrete pipe, 0.47 of iron pipe and 0.77 of reinforced concrete and brick. The total number of feet of house connections to that date was 158,600.

UNDERGROUND WORK IN PHILADELPHIA

All Underground Structures Under Control of Board of Highway Supervisors—Regulations for Constructing Electrical Conduits, Pipes and Vaults—Locating and Mapping These—Standard Map Details

IN GENERAL all of the construction work connected with the surface and subsurface of the streets in the city of Philadelphia is under the control of the Board of Highway Supervisors. This Board is composed of the Director of the Department of Public Works, who is President of the Board, and the chiefs of the several bureaus of Highways, Surveys, Water, City Property, and the Electrical Bureau. It is the idea to have represented on this board all the departments which are directly concerned in or affected by the paving of the street, the cutting into such paving for repairs or new construction, and all work within the limits of the city highways which affects existing sub-surface structures.

One of the most important duties of this board is the obtaining, compiling and mapping of all possible information concerning structures which have already been located under the streets and those which are from time to time so located. For this purpose a corps of field inspectors and draftsmen is maintained and authority and power given to the board to make and enforce such requirements as may be necessary to give it this information, and to control the actions of corporations or individuals in their use of the streets. Rules and regulations were adopted by the board in 1898 covering the laying of gas mains, in 1900 covering the laying of underground pipes of all kinds, in 1904 governing the construction of vaults and others covering any excavations into the street surface not provided for by the other regulations, and in 1906 regulations for the laying of electrical conduits, tubes and manholes. The last named and latest adopted are the most complete, and are given herewith in full.

RULES AND REGULATIONS OF THE BOARD OF HIGHWAY SUPERVISORS GOVERNING APPLICATIONS FOR THE LAYING OF ELECTRICAL CONDUITS, TUBES AND MANHOLES

Adopted November 8, 1906

SECTION 1.—Companies, corporations, firms or individuals applying under the general ordinance of August 5, 1886, "Regulating the laying and construction of underground wires, electrical conductors, conduits, cables and tubes in the city of Philadelphia," shall file with the Board of Highway Supervisors:

1st. A.—An application, in writing, giving full name of company, corporation, firm or individual, together with amount of capital, business address—the names of officers and directors with address.

B.—The purpose for which they wish to use the streets.

C.—Character of conduits, manholes, tubes, etc.

2d. At least two copies on Linaura of plans, showing all existing underground structures and complete details of proposed construction.

3d. Such other information as may be required to enable the Board to reach a clear understanding of the whole subject.

SECTION 2.—Before any street surface shall be broken, or a permit be issued (except as hereinafter provided), the following rules and regulations, and such additional rules and regulations as the Board of Highway Supervisors may from time to time adopt, shall be binding on the applicant or applicants.

1st. "A."—The execution of bond, etc., to comply with general ordinance, "B," compliance with the ordinance granting special privileges, "C" compliance with the rules of the Board of Highway Supervisors.

2d. A certificate from the City Solicitor that the necessary bond and agreement has been filed.

3d. A certificate from the City Treasurer that the requisite payments have been made.

4th. An agreement from the contractor who is under liability for the maintenance of any street desired to be broken, stating that the guarantee will in no way be affected by the breaking of the same.

SECTION 3.—After the approval of the Board of Highway Supervisors and the issuance of the permit the terms and conditions of the application and the accompanying plans shall not thereafter be altered or departed from without the consent of the Board previously obtained; except that in cases of emergency, the Chief of the Electrical Bureau may authorize modifications when necessary, reporting his action to the Board at its next meeting.

2d. Where a conduit crosses a bridge a plan shall be submitted to the Chief of the Bureau of Highways, and no conduit laid thereon until such plan is approved.

3d. On undedicated streets the consent of the owner or owners shall be first obtained, and affidavits to that effect filed with the Board of Highway Supervisors.

SECTION 4.—Before any street surface shall be broken, under a permit as above, notice must be given, in writing, by the receiver of the permit, to the Chief of the Bureau of Highways and the Chief of the Electrical Bureau, of the time, place and extent of the proposed breaking; and where a conduit is located on the sidewalk the District Surveyor shall be notified of the location and the date of commencing the work.

SECTION 5.—1st. No portion of any new structure, when in place in the street, except such as is designed to form a part of the street pavement, shall be less than two (2) feet below the surface of said pavement, except with the written approval of the Chief of the Bureau of Highways; and the tops of iron structures forming parts of the street pavement shall have a roughened surface with projections rising not less than one-half (½) inch, and spaced not more than two and one-half (2½) inches apart, as approved by the Board of Highway Supervisors. All manhole covers upon streets paved with asphalt, vitrified brick or wooden blocks shall be filled with asphaltum or other material to the satisfaction of the Department of Public Works.

2d. New work and new structures shall not interfere with existing pipes, sewers, conduits or other structures, or their connections, except where absolutely necessary, and then only with the previous consent, in writing, of the Chief of the Bureau having charge of such structures. Any modification of existing structures found to be necessary must be made by or under the direction of the Bureau concerned and at the expense of the party having the permit. All necessary supports and protections to existing structures must be promptly supplied by, or at the expense of, the party having the permit, and to the satisfaction of the Bureau concerned. The said party shall erect and maintain and bear the expense of all necessary guards and danger signals, furnish all necessary watchmen to protect the public and the work during its progress, assuming all liability for accident or damage to persons or property that shall occur in the course of or by reason of said work, and agree to save harmless the City, its officers, agents and servants in all such cases.

3d. When, in the judgment of the Board, it shall be deemed desirable to employ one or more special inspectors to supervise the work, such inspector or inspectors shall be appointed by the Director of the department having supervision over the same, and a sufficient sum deposited by the party receiving the permit, with the Chief of the Bureau, for the payment of such service.

SECTION 6.—1st. Openings in streets shall be made at such times and places, and be supported and guarded in such manner as, in the judgment of the Chief of the Bureau of Highways, will least interfere with the rights and convenience of others, and interrupt the traffic of the streets no more than is absolutely necessary.

2d. Material and tools for construction must not be delivered in the street till needed for immediate use, and then must be so placed as to cause the least interruption to traffic. Not more than five hundred (500) feet in length shall be obstructed or occupied at the same time without special authority of the Board.

SECTION 7.—1st. All openings in streets must be promptly filled with suitable material, free from rubbish and perishable matter, and thoroughly and evenly compacted throughout, by ramming in thin layers while being put in, or by puddling. The pavement of street or footwalks must then be at once restored with the same character of material, equal in composition and color to match old work, in accordance with the standard specifications of the Department of Public Works, Bureau of Highways, for such class of work, and maintained in good condition, satisfactory to the Department of Public Works, during the time of any existing guarantee, or as required by Ordinance of Councils, but in no case for a less period than five (5) years. All permits are issued subject to Ordinances of Councils regulating the paving and repaving of streets.

2d. Surplus and condemned material must be removed, and the street cleaned and entirely restored, without delay.

SECTION 8.—1st. All subsurface structures and all surface structures forming part of the street must at all times be kept in good repair. All work and material used in restoring or repairing the street shall be satisfactory to the Department of Public Works, and when notice calling attention to needed repairs is given it must receive attention within twenty-four hours.

2d. All work and material used in the construction of electrical conduits and manholes must be satisfactory to the Chief of the Electrical Bureau, and any work or material condemned by him must be at once made satisfactory.

SECTION 9.—Immediately after the completion of the work the party to whom the permit is issued shall file complete plans in detail to a scale satisfactory to the Board, showing the work as constructed, with all previously existing structures encountered during the construction of the work.

SECTION 10.—Should work necessary to protect the public in the use of the street be omitted or imperfectly performed by the party holding the permit, then after notice the Chief of the Bureau of Highways may cause the work to be done at the expense of the party receiving the permit. Failure at any time to fully and faithfully comply with these regulations, and such further regulations as the Board may from time to time prescribe, or promptly pay such expense as hereinbefore or hereinafter authorized, shall at once work a forfeiture of permits issued, and debar the party from receiving any further permits until relieved by action of the Board of Highway Supervisors.

SECTION 11.—Permits for electrical house connection for the construction of manholes on lines of underground conduits already constructed, where such construction is of advantage to the City or the betterment of the system, may be issued by the Bureau of Highways after approval by the Chief of the Electrical Bureau, without reference to the Board of Highway Supervisors. House connections shall follow the line of conduit and not cross streets diagonally.

SECTION 12.—If, in the laying of water or gas pipes, sewers, or any other municipal work, it shall become necessary to change the location of any of the conduits, manholes or other structures, they shall be shifted or altered at the cost or expense of the owners to such places as shall be directed by the Board of Highway Supervisors.

2d. Where the City constructs or reconstructs sewers, or lays or relays water pipes, the company shall maintain its conduits.

SECTION 13.—No permit will be valid for more than the number of days specified therein, which shall be determined by the Board of Highway Supervisors at the time the permit is authorized; for any subsequent work a new permit must be obtained.

SECTION 14.—Persons in charge of any work on the streets must have in their possession, at all times while so engaged, the permit issued by the Department.

SECTION 15.—All permits shall expire on December 31 of the year in which they are issued.

The chief variations between these and the other regulations referred to are as follows: Section 2, rule 4 is not contained in any of the other sets of regulations, although we believe that this is required of all parties under the general provision that the board may add to the rules as published. In the regulations for gas mains it is provided that duplicate plans of existing and proposed construction must be filed when making the application only in cases where the pipe is 10 inches or more in diameter; "where the diameter of the pipe is less than 10 inches, the location for laying the same should be obtained from the Board of Highway Supervisors, and stated in writing on the permission granted."

In connection with the general regulations for laying pipes it is provided that the application must state "the amount of capital and the purposes for which they wish to use the streets." This is to provide for new corporations other than the large gas and electric companies, and this provision is to inform the board as to the reliability of the company.

Section 4 in the regulations printed is practically the same for gas mains and pipes generally. For vault construction and in the case of the general regulations to cover work not otherwise provided for, it is required that notice be given "to the Chief of the Bureau of Highways and chief of each bureau whose works are likely to be met with or encroached upon." In connection with permits for the construction of vaults, it is provided that the approval of the application requires, to be effective, the affirmative votes of not less than four supervisors, duly reported by the clerk under a call of the yeas and nays. In all cases except the laying of gas mains, the regulations provide that the pavement must be maintained in good condition for at least five years; but for corporations laying gas mains this minimum is fixed at three years only. It is also required of the gas company that when it has obtained permission for laying gas mains, it "should begin the work of laying same within three months after obtaining same; failing to do so, they must file a new application as herewith required."

Before receiving a permit the company must sign an acceptance of the regulations. The form of acceptance for electrical conduits and for general work is as follows:

ACCEPTANCE OF REGULATIONS

.....having made application
.....
do hereby agree that such occupation shall be at.....
sole risk, and that the City shall in no case be liable for any claims for damages to persons or property resulting from any break in the streets, in sewers, city pipes, or other public structures; and do hereby further agree to make, at.....own expense, all necessary alterations or removals of inlets, stop boxes, lamp posts, telegraph or electric light poles, fire hydrants, or other structures, and to repave the streets displaced, from curb to rail, or of such widths as required by the Department of Public Works, or as specifically directed by Ordinance of Councils, and to give a satisfactory bond guaranteeing the maintenance of the pavement in good order and condition to the satisfaction of the Department of Public Works during the time of any existing guarantee or as required by Ordinances of Councils, but in no case for a less period than five (5) years, and accept and agree to be governed by the Ordinances of Councils and the rules and regulations of the Board of Highway Supervisors and such additional rules and regulations as the Board shall hereafter make.

That for the gas companies is much briefer, merely stating that the applicant

Hereby agrees that such occupation shall be under the terms and conditions of the ordinance of..... authorizing them to lay gas mains, and the rules and regulations of the Board of Highway Supervisors relating to the laying of gas mains.

The acceptance for parties constructing vaults is different from the others and is as follows:

ACCEPTANCE OF REGULATIONS

.....having made application to construct a vault in front of premises No.....
extending in length or frontage.....ft. and in width to within.....ft. of curb line, do hereby agree that such occupation shall be at.....sole risk, and that the City shall in no case be liable for any claim for damages for the re-occupation and use of the whole street, or any part thereof, to the house line for public purposes, or any damage to persons or property resulting from any break in city pipes, sewers or other public structures; and do hereby further agree to remove all lamp posts, telegraph poles, fire hydrants, inlets and other municipal or duly authorized structures at their own expense, and accept and agree to be governed by the Ordinances of Councils and the rules and regulations of the Board of Highway Supervisors, and such additional rules and regulations as the Board shall hereafter make.

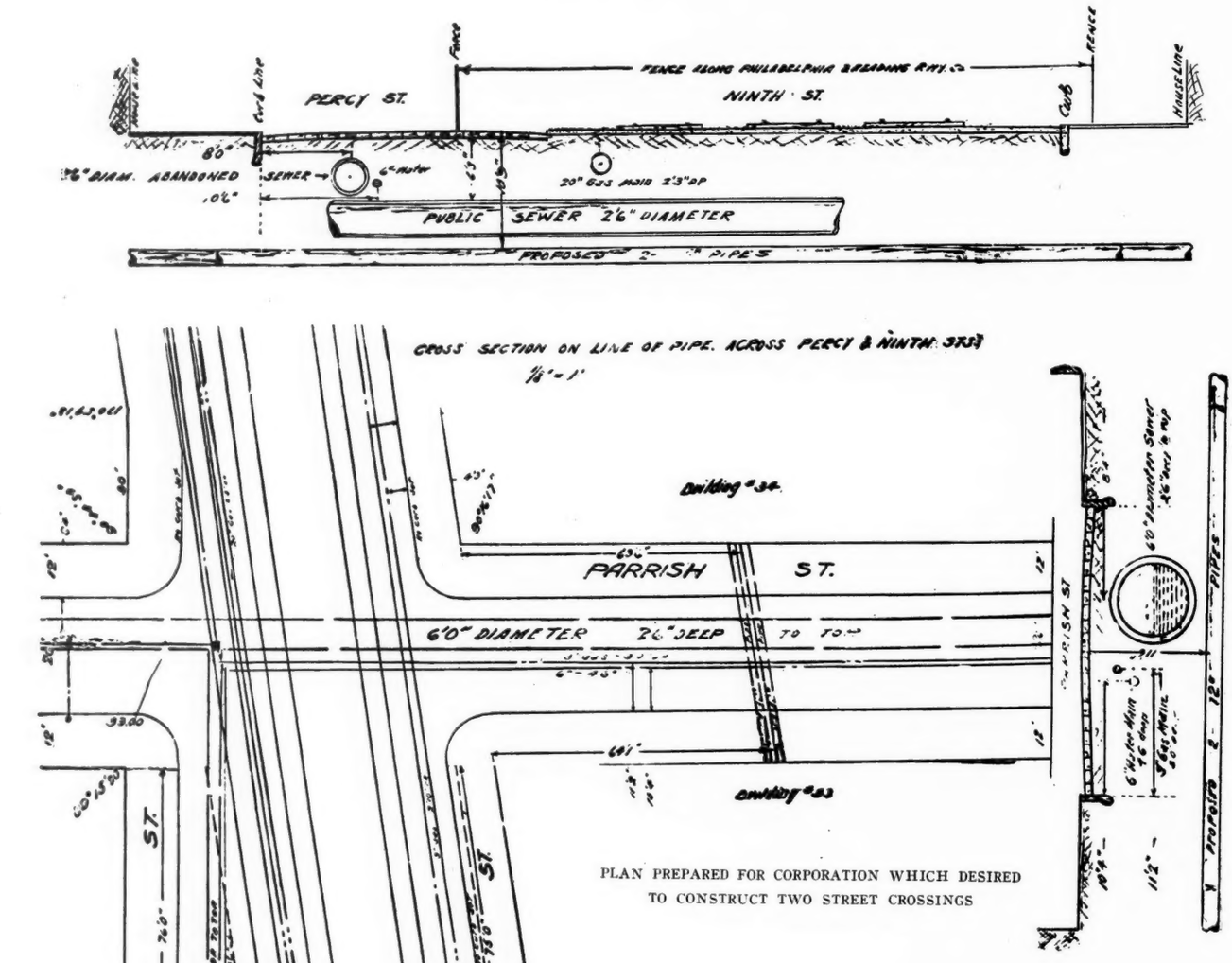
Rule 4 of section 2 is met by having the applicant secure from the paving company, which is under contract to maintain the pavement under consideration, a statement that it foregoes any right to annul the contract for maintenance which it might acquire through the disturbing of the pavement by the work contemplated. The petitioner generally arranges with the paving company to repave over the opening, of course paying the paving company for such repaving and for maintaining the same during the period of the guarantee to the city.

It is seen by these rules that the Highway Department is notified beforehand of any intention to make an opening in any street for any purpose whatsoever. On the other hand, when it is intended to pave or repave a street the Bureau of Highways sends notice to the officials in charge of the sewer and water departments and to all gas and electrical companies, notifying them that such paving is contemplated and that they must make all repairs or renewals contemplated and do all other work which they can foresee may be necessary before the pavement is laid. The sewer and water departments must lay mains in the streets in question, and certify to the Bureau of Highways that these mains have been completed before the bureau will

begin paving the street. This means, of course, that no street will be paved which has not been provided with both sewers and water mains.

It will be noticed that it is required of each applicant that he file with the board when making his regular application duplicate copies "showing all existing underground structures and complete details of proposed construction." It would, of course, be difficult and expensive for corporations, and especially so for private individuals, to obtain such information through measurements, test pits, etc., made by themselves. Consequently the board maintains, as stated above, a corps for obtaining this information and preparing the plans required, for which work the applicants are charged according to a standard schedule. This charge is 5 cents per foot for pipes, conduits, etc., where the length of street covered is less than 2,500 ft., and 3 cents per foot for lengths exceeding this. For vaults and other structures which would not come under this rule the charge is $5 for a plan. Where special investigations are required the applicant is charged the cost of obtaining the information. These charges are for paved streets. Where the street is not provided with permanent pavement the charge is but one cent a foot, it being generally the case that there are very few underground structures on such streets, and consequently little work in preparing the plans.

Although a large part of the city has been covered by the board no attempt is made to systematically investigate the entire city, but the information is obtained and plans made only as they are asked and paid for. Since 1884, when this plan was inaugurated, about 5,000 permits have been granted, in connection with each of which the department has collected data of underground structures for the areas involved. It will be noticed that the rules provide that the applicants shall also give to the department, upon the completion of any given work, detailed plans of this work drawn to scale, showing not only



PLAN PREPARED FOR CORPORATION WHICH DESIRED TO CONSTRUCT TWO STREET CROSSINGS

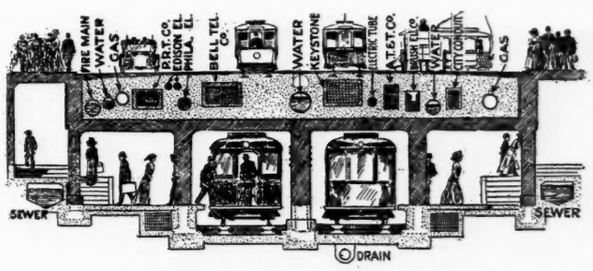
the new work, but the location, dimensions, etc., of any old structures encountered during the excavation. As this rule has been in force since 1884 the department has collected in this way plans of all the structures placed underground since that time. Of structures which antedate this period probably the majority have been located, although it is known that a number of old sewers, water pipes and some private structures exist, the location of which is still unknown.

From the information obtained in these several ways the office force prepares a map showing the location of the underground structures, and in some cases cross-sections of the street also. From this map it is determined where the new structure shall be located, and this assigned location is that which the

applicant is required to adhere to. As the object is to select the location which will require the least disturbance of existing structures, there is seldom or never any objection on the part of the applicant to accepting the location.

In preparing this map certain standards are employed. The standard size of sheet is 27 by 30 inches and the scale is 20 feet to one inch. As the preparation of the plans is not carried systematically over an entire area, but rather follows the lines of proposed conduits, the maps are generally arranged by streets rather than by areas. The size of map in most cases permits two lines of street to be placed on each sheet. The street is so divided that a break in the line does not come at an intersection. Property lines are shown in black, curb lines in blue, sewers in red, and other conventional colors used for different structures. Sewer manholes are represented by a large dot enclosed in a circle; other manholes by the dot without the circle. Water works valves are represented by small rectangles filled in.

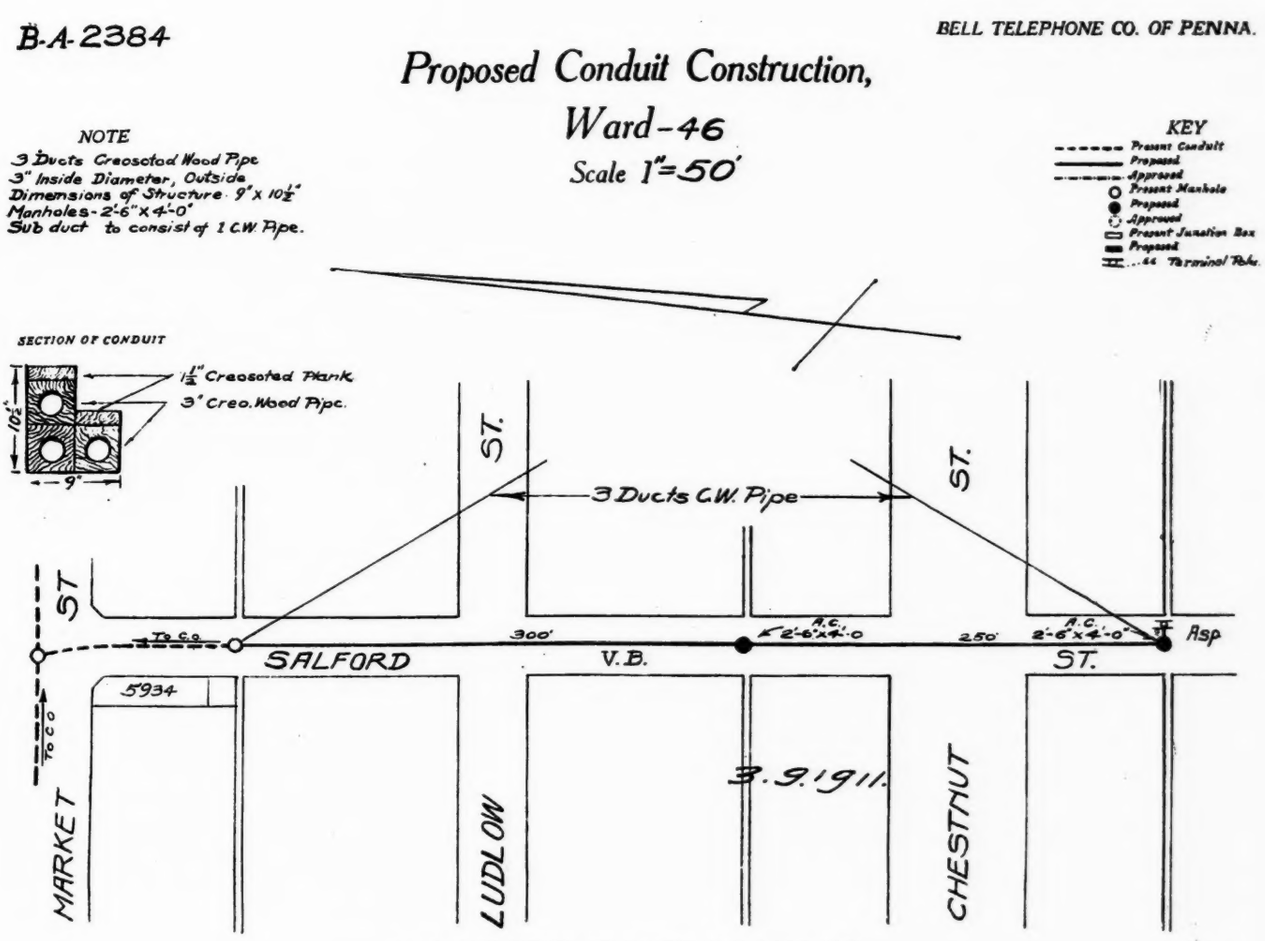
All plans are filed alphabetically by streets. The tracings, notes and all other data which have been collected are also filed, alphabetically by streets. There is more territory covered by the latter than by the former, since notes, plans of completed work, etc., are not used for preparing the plans until such plans have been called for by applicants for permits. There is a card index which also is arranged alphabetically by streets, and this gives the file location of all such plans and notes, incidentally giving a list of all structures in the street in question. An atlas of the city is used for recording the streets which have been surveyed, the surveyed sections being indicated on this atlas by coloring the streets covered. On a large wall map the sections of streets of which completed plans have been prepared are indicated in a similar manner. Where new structures are placed or changes made in old structures in streets, plans for which have already been prepared, these are indicated upon the old plans, the original lines being erased when changes are made and no record remaining on the plan of the original construction.



CROSS-SECTION OF MARKET STREET

Showing underground structures as relocated to provide for subway

During the years 1901 to 1910, inclusive, 998 plans of this kind were made, covering 206 miles of streets. During the same period the earnings of this department amounted to $232,538.22, and the expenses to $111,719.35. (During the years 1908 and 1909 there was a deficit owing to the fact that dull times resulted in a comparatively small number of applications for permits, while the size of the corps was maintained as usual.) It is thus seen that this service is considerably more than self-supporting. On the other hand, the corporations are very glad to avail themselves of its service, since the knowledge which they thus obtain of the existing underground structures undoubtedly means an immense saving to them every year in placing their pipes and conduits.



PLAN SUBMITTED TO BOARD FOR APPROVAL

MUNICIPAL BUDGET CLASSIFICATION

The annual report of the city comptroller of Atlantic City for 1910 shows the budgets of that city arranged according to the general functions for which the moneys were appropriated, the scheme being that recently introduced in New York, recommended by the Bureau of the Census and approved by the National Association of Comptrollers and Accounting Officers. It is believed that the advantage of this classification is that it states the finances of the city in a way which is within the comprehension of every intelligent taxpayer. The main heads of the classification are as follows:

Government and Finance—
(1) Executive and Legislative; (2) Taxes and Accounts; (3) Legal and Judicial, and (4) Fixed Charges.

Protection of Life and Property—
(5) Police Department; (6) Fire Department; (7) Public Property.

Highways and Drains—
(8) Street Account; (9) Lighting Account.

Health and Sanitation—
(10) Board of Health; (11) Sanitary Account.

Education and Publicity—
(12) Public Institution; (13) Public Library; (14) Publicity and Printing.

(15) Charities and Correction.
(16) Public Utilities.
(17) Miscellaneous.

To give an idea of what is to be included under each of these subheads, the Atlantic City items may be named. These are as follows, for the year 1910:

Under 1, Mayor, chief clerk, messengers, printing and stationery, city clerk and assistant city clerk, stenographer, supplies.

Under 2, city comptroller, auditor, bookkeeper, warrant clerk, permit clerk, extra clerical work, printing and stationery, city treasurer, account books, tax collector, deputy tax collector, assessors and assessors' clerk.

Under 3, recorder, recorder's clerk, sergeant-at-arms, printing and stationery, judge of the district court, clerk of district court, sergeant of district court, city solicitor and clerk, recording in county clerk's office, sundry legal expenses.

Under 4, county tax, interest on bonds, interest on temporary loans, sinking fund.

Under 5, chief of police, captain of police, captain of detectives, sergeants, patrolmen, turnkeys, drivers, etc., detectives, life guards, matrons, police surgeons, police equipment and sundries.

Under 6, secretary of fire committee, chief engineer, assistant engineers, veterinarian, rubbish and plug inspectors and assistant inspectors, captains, engineers, lieutenants, drivers, uniform warrants, feed, light and coal, rent of office, pension fund, insurance, horses and harness, hose, telephone, printing and stationery, horse shoeing, oil and supplies, storehouse supplies, heating, contingencies.

Under 7, building inspector, assistants, clerk, printing, custodian, janitors, boardwalk maintenance, electric supplies, city electrician and assistants, board of engineers, board of improvements, property contracts, account books, building department.

Under 8, street sprinkling, repairs to streets, engineering, supervisor, engineer, printing and stationery, account books, engineer's assistants, supervisor's assistants.

Under 9, street lighting, boardwalk illumination.

Under 10, salaries, supplies, sundries, emergency hospital.

Under 11, street cleaning, comfort stations, public fountains, garbage collection and disposal, public baths.

Under 12, teachers' salaries, night schools, buildings and repairs, books and supplies, manual training, fuel and janitors, miscellaneous, maturing school bonds and interest.

Under 13, salaries, books, fuel and light, repairs and furnishings, printing and stationery, rebinding, sundries.

Under 14, bureau of publicity, contingent advertising, tax assessment publicity.

Under 15, Atlantic City Hospital, organized charities, day nursery, Florence Crittenton mission, firemen's pension fund, salary of overseer of poor, contingent fund of police department, relief of poor, burials, public institutions, physicians and medicines, poor bonds, volunteer firemen's association.

Under 16, management and repairs, street services, extensions and construction, pumping expenses, meters, sinking fund of water bonds, interest on water bonds.

Under 17, armories, memorial services, prevention of cruelty to animals, elections, contingent, surety bonds, advertising, stationery, miscellaneous printing, Lincoln celebration, refunds of costs and assessments, Keswick society.

WAGON LOADS AND TIRE WIDTHS

Power of Municipal Corporations to Limit Loads Carried Over Their Streets—Decisions in Several States

By John Simpson.

The question of the power of municipal corporations to make ordinances limiting the weight of loads which may be carried by vehicles passing over their streets has several times come up for decision, with the result that in general the ordinances have been upheld, provided they stand the test of reasonableness and want of undue discrimination. The general statutory power to care for and maintain the streets is sufficient to confer the authority, and no express statutory provision is necessary. Indeed, in a Missouri case mentioned hereafter express statutory power as to limitations of which of tires to heavy vehicles was held to have the effect of limiting the general statutory powers elsewhere conferred.

In 1871 the city of Utica passed an ordinance providing that no person should use, cause or suffer to be used, any wagon, cart or other vehicle upon any paved or improved street within the city limits, to carry 4,000 pounds or upward, unless the tires upon such vehicles should be at least four inches in width, or to carry over 2,000 pounds and less than 4 000 pounds unless the tires should be at least three inches in width, and imposing a penalty of $15 for each violation of the ordinance. It also authorized the mayor or any alderman or policeman, when he suspected any person of violating the ordinance, to require the load of said person to be weighed, and if found to exceed the limit above specified, such person should pay the expense of weighing and the amount should be added to the penalty. The city's charter contained a clause empowering the common council "to clean the streets and to pass ordinances requiring the same to be kept clean and in proper order and free from encroachment, incumbrance *or injury.*" It was held that under this clause the common council had power to pass the ordinance, but the part of the ordinance directing the expense of the weighing to be added to the penalty was held to be unauthorized by the charter and void. City of Utica vs. Blakeslee, 46 How. Pr. (N. Y.) 165.

An ordinance of the city of Kingston, N. Y., prohibited any person from transporting a load weighing from 2½ to 5 tons over any macadamized, paved or top-dressed street of the city in any vehicle having a tire less than four inches wide on its wheels. The power to pass such an ordinance was not expressly conferred by the city charter, but that contained a provision that "the common council shall have the powers and discharge all the duties of commissioners of highways in said city; to lay out, make and open streets * * * and cause the same to be repaired; to cause any street * * * to be graded, paved, or repaired"; to prescribe "of what materials" the same should be, and to make ordinances for the purpose of executing the powers conferred upon them. It was held that these provisions authorized the common council to pass

reasonable ordinances for the care of the streets. It was reasonable to protect paved streets from being crushed and ruined by loads of enormous weight, borne upon vehicles with wheels of narrow tires, which cut through the pavement, when a broader tire would bear the load without causing such injury. The ordinance was therefore upheld. People vs Wilson, 16 N. Y. Supp. 583.

In Commonwealth vs. Mulhall, 162 Mass. 496, an ordinance of the city of Boston which provided that "no person shall carry or cause to be carried on any vehicle in any street a load the weight whereof exceeds three tons, unless such load consists of an article which cannot be divided" was held to be reasonable, constitutional and valid under a statute which provided that the mayor and aldermen and selectmen might make such rules and regulations for the passage of carriages, wagons, carts, etc., as they might deem necessary for the public safety or convenience, under a penalty for each violation. The ground of decision in this case was that the use of heavily loaded vehicles might be a matter affecting the public in the use of the streets, which might be regulated under the statute.

Under the charter of the city of Syracuse, which contains similar general powers over streets and highways, an ordinance prohibiting the use of any wagon or other vehicle upon any paved, macadamized or improved street in the city, carrying a weight of 3,000 pounds or upwards, unless the tires of such vehicle are at least three inches in width, under a penalty, was held to be within the power of the common council. People vs. James, 16 Hun. (N. Y.) 426.

An ordinance or town by-law which set apart and designated a portion of a certain street, measuring fifteen feet in width, next to the electric railway track, for the transportation on wheels of limestone and other materials, where the load, exclusive of cart or vehicle, should exceed 2,500 pounds in weight, under a penalty for violation of the ordinance, was held by the Maine Supreme Court not to be inconsistent with the law of the State. It did not deprive a person of any right provided the portion of the street to which such vehicles were restricted was reasonably suitable for the purpose. That would not be the case if this part of the street should be allowed to become in such a condition of want of repair as to be impassable. State vs. Boardman, 93 Me. 73.

An ordinance requiring persons hauling loads which, with the vehicle, weigh 3,500 pounds or upward, to use wagons with tires three inches or more in width was held by the Illinois Appellate Court to be reasonable and to be authorized by the statute giving power to cities and villages to regulate the use of streets. Harrison vs. City of Elgin, 53 Ill. Ap. 452.

The charter of the city of St. Louis contains a provision empowering the municipal assembly to regulate by ordinance "the width of the tires of all vehicles for heavy transportation." It was held that this was a limitation of the general power elsewhere given in the charter to the corporation to improve the streets, etc., and to regulate the use thereof. An ordinance requiring all vehicles having axles of iron or steel of a thickness or diameter of one and one-fourth inches and over to have on their wheels tires of a certain width, corresponding to the size or thickness of the axle, the effect being to include vehicles other than those for heavy transportation, was held to be invalid. State vs. Clifford, 228 Mo. 194.

Undue discrimination will invalidate such an ordinance. A by-law of a town provided that no one should use any wagon, etc., upon any street of the town for drawing brick, stones, etc., when the weight of the load should exceed 1,500 pounds, unless, if the wheels were not less than three feet six inches in diameter, the tires should be at least three inches wide; and if the wheels were less than three feet six inches in diameter then the tires should be four inches wide. It was held that such a by-law was unobjectionable if it were made to apply equally to all persons who use the public streets in the manner forbidden by it; but it was provided that it should not apply to any wagon conveying lumber or goods from the mill or manufactory thereof into the town if distant more than two miles from the town limits, nor to any person passing through the town with vehicles loaded with such articles. It was held that this was a discrimination as against residents of the town in favor of the others which invalidated the by-law. Regina vs. Pipe, 1 Ont. 43.

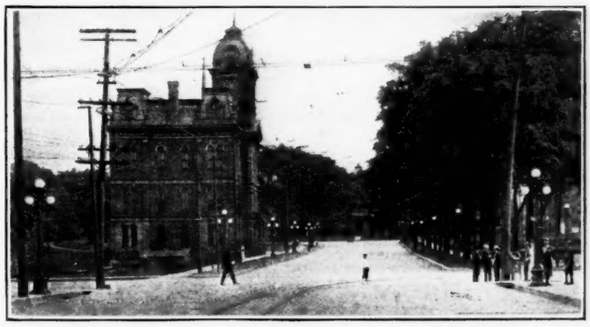
STREET LIGHTING IN WARREN

WARREN, Ohio, a city of approximately 12,000 people, has recently installed a new street lighting system and all parts of the city are now lighted by Mazda incandescent lamps.

The most spectacular part of the system is that in the central business district, where there are eighty-six ornamental standards. Twenty-two of these are placed around the public park, each supporting a single lamp in an upright position. Directly in front of the court house and near the center of the park are two 5-light standards. The remaining sixty-two units are 3-light standards. The pendant lamps are of 40 cp. and are enclosed in 12-inch Alba globes, while, with the exception of the park standards which have 60 cp. lamps, all the standards have 80 cp. upright lamps enclosed in 14-inch Alba globes. The wiring of the lamps is such that the pendant lamps can be turned off at midnight, leaving tthe upright lamps to burn until daybreak.

The residential streets also have not been neglected. The present residential street lighting had its beginning in two trial installations made about two years ago, which met with such general approval that it was determined to have all the streets in the city equipped with Mazda incandescent lamps. The residential lighting system now installed includes 620 of these suspended from goose-neck brackets, the latter being attached to wooden poles. The units are spaced as uniformly as possible along one side of each street, the distance between units on any street depending on the amount of traffic. This gives a much more uniform illumination than that existing with th old system of open arc lamps.

Use of the new system was officially begun on the night of June 7th. For ten days previous arrangements had been in progress to celebrate the occasion in a fitting manner, and delegations came from neighboring towns and cities to take part in the festivities. Over 2000 people took part in a parade, the main feature of which was a series of five floats typifying successive stages in the development of artificial lighting, from the campfire of the Indian to the modern installation of ornamental street lighting such as is now seen in Warren.



MAIN STREET, WARREN, O., LOOKING NORTH.
Night View and Day View from Same Point.

LOT DEPTHS IN CITY PLANNING

Effect on Density of Population and on Character of Dwellings —Depths Desirable for Different Sections —The Alley Problem

THE importance of the distance between streets, or the size of block, in city planning was the theme of a paper before the Conference on City Planning by Lawrence Veiller, secretary of the National Housing Association. While this is of minor importance as affecting the traffic on streets, it is of considerable importance as affecting density of population and the general character and healthfulness of the dwellings and other buildings occupying a district. "To the deep lot," said Mr. Veiller, "we can trace most of our housing evils so far as they relate to land over-crowding. The street plan determines the block plan, and the block plan determines the lot plan. The street widths determine the height to which buildings may wisely be built and the presence or absence of alleys is of vital moment to the future sanitary welfare of the city."

Data concerning the sizes of blocks and depth of lots were obtained from 45 of the 50 largest cities in this country. The depth of lot, if one can judge from the information thus received, seems to vary from 50 feet to 200 feet. In the great majority of cities the lots exceed 100 feet in depth. In only three cases is the usual depth of lot less than 100 feet, namely, in the cities of Philadelphia, where it ranges from 40 feet upward; Lowell, Mass., where it ranges from 80 to 150 feet, and Washington, where it ranges from 50 to 100 feet. In 25 cases, or over one-half of all the cities, the usual lot depth is 125 feet or over. In nine cases, or one-fifth of all, the usual depth of lot is 150 feet or over.

In the majority of cases the distance between the streets forming the longer sides of a block is double the average depth of lot, the exceptions being lots which run entirely through from one street to another. Mr. Veiller believes that while well-to-do residents in a comparatively small city desire lots 150 to 200 feet deep, with the house set 40 or 50 feet back from the street and with room behind for a garden, stable, etc., such depth is entirely too great for any other use to which a city lot is ordinarily put. The history of most cities has been that as the city increases in size and the business center enlarges, such properties are apt to be used successively by boarding houses and for tenements, and possibly for business houses. For either of these purposes such a depth of lot is uneconomical and it becomes necessary to make more complete use of it by adding to the depth of the building or by constructing rear tenements or other buildings, either of which is unsanitary and otherwise objectionable. While recognizing this, the author said, "I see no escape from this dilemma, however. Our best residence sections will have to be designed to meet the needs of their present use and not of a remote possible future use."

Concerning the desirable depth of lot for workmen's cottages in industrial towns and large cities, Mr. Veiller goes to an extreme which was not endorsed by the other speakers at the convention. Such lots he believes should have a depth not greater than 25 or 30 feet. "This means that there would be no front yard and no back yard; that the houses built in continuous rows would have one frontage on one street and another frontage on another street. This must seem at first consideration a startling and radical departure from what we have been accustomed to consider as desirable in the housing of the poor." He states as his reason that the front yard in such districts is almost invariably a desolate waste of land and a disfigurement to the district, while the back yard serves merely to collect all the rubbish of the household, breeding odors and flies and giving rise to other unsanitary conditions. Also the space between detached houses is of little value unless it be at least 15 feet, and this distance is seldom found. Unless the house be detached it should be only two rooms deep, thus giving direct light and air to every room. The idea of the front flower garden and the vegetable garden in the rear where the laborer can put in his spare time to advantage he considered a Utopian dream and believed it necessary to recognize this and act accordingly.

He held that for high-class residence purposes lots should be 125 feet deep; for the homes of the better-paid artisans and mechanics, 50 feet deep; and for the homes of the unskilled laborer and what we call "the poor," 25 feet deep. He considered that the only way to secure such a sub-division into lots, and consequently into blocks, would be the adoption of the zone system as found in Germany; although he stated his belief that this would be almost impossible in this country.

In suggesting such small blocks he did not overlook the fact that this would greatly increase the number of streets in a given territory, and thus the cost of constructing and maintaining pavements, policing, etc., in a given area.

Concerning the alley, he had much to say. He considered it both a blessing and a curse; the former in so far as it lets light and air into the interior of city blocks, the latter in so far as it becomes the dumping ground for all cast-off materials—ashes, garbage, manure, rubbish and all kinds of putrescible and non-putrescible matters. "Unpaved as most alleys are, the cleaning often is a difficult problem. This difficulty is greatly enhanced by the fact that in most cities the city itself assumes no responsibility for their cleanliness, but looks to the abutting property owner to perform this function. The result is what might be expected. We years ago passed beyond that stage of our development where we imposed on private citizens the responsibility for cleaning the streets in front of their houses, but we still, in many cities, foolishly expect them to clean the streets in the rear." Of the 45 cities above referred to, 25 report alleys as being general in their area. Several, however, reported that they were found in the old part of the city, but not in the new.

The solution for the alley problem he believed to be that the city should become the owner in fee of the alley, where it is not already so, and should convert it into a minor street and assume all responsibility, paving it, cleaning it, and seeing that it is lighted and policed.

ROCHESTER SEWAGE DISPOSAL

Although the plans for the disposal of the sewage of Rochester, the reports concerning which have been referred to at considerable length in previous issues of this paper, have not been completed in all details, the general location of the plant and the method of conducting the sewage there have been finally decided upon and work upon the intercepting sewer is now under way. This interceptor extends from the center of the city, along and crossing under the river, to the shore of the lake, where there will be screens and silt and sedimentation basins. About 6000 feet of this interceptor will be in tunnel through rock. That portion of it which passes under the river will be used for carrying water mains, thus saving a considerable part of the expense which would be involved in laying these separately.

The interceptor increases in diameter from five to nine feet at intervals along its length. The lower third of the sewer is lined with granite blocks 8½ inches deep and the remaining two-thirds with two-ring brick work, backed with concrete. At the end of the tunnel the interceptor is carried under the river as an inverted siphon in two iron pipes, 36 inches and 42 inches in diameter respectively. There will be an overflow into the river at the end of the tunnel and blow-offs into the river from the inverted siphons. Several trunk sewers discharge into the interceptor and at the junction of each is an overflow so designed that when the amount of storm water exceeds 2½ times the volume of the dry weather flow, the surplus will pass to the river through the sections of the existing trunk sewers leading from the interceptor to the river. The tunnel is now being driven from several shafts in the main part of the city.

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CHANGE OF ADDRESS

Subscribers are requested to notify us of changes of address, giving both old and new addresses.

Contributions suitable for this paper, either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

JULY 5, 1911

CONTENTS

Flies and Typhoid Infection

ATTENTION was called in our issue of June 28th to the fact that in several Southern cities only a small percentage of the residences are connected to the public sewers. The local Board of Health of one of the largest of these, on the south Atlantic coast, reports that at the end of 1910, although 1,500 surface closets had been removed during the year, there still remained 3,400 within the limits of the city. If we assume an average of six inhabitants to each of these we have over 20,000 population still without connection with the city sewer, which is just about one-half of the total population of the city. The same report says: "The typhoid situation is unchanged, and while our death rate from this disease is low it can and must be made still lower. (The rate was about 40 per 100,000 in 1910.) The only thing needful to be done to control typhoid in this community, which is not being looked after, is to enforce rigidly the manure ordinance which was passed a year ago and to break up in that way the breeding places of house flies which are being maintained by so many of our citizens."

It seems to us that in the above quotation the existence of surface closets should have been at least referred to as a probable cause of typhoid. In this, as in other instances where house flies have been blamed for typhoid epidemics, but no reference made to the sources from which the flies obtain the typhoid germs which they have carried, it seems to us that this is a serious omission and likely to lead to fatal carelessness. It is, of course, desirable to reduce the number of flies or at least to keep them from the kitchens and dining rooms; but it is still more desirable and logical to suppress the sources from which the flies obtain the infectious matter. When the city referred to has compelled all of its residences to connect with the sewers and has destroyed all the surface closets there will be comparatively little danger from the house fly.

Incidentally the Board of Health might turn its attention to the physicians of the city and require them to report contagious diseases. During 1910 there were eight deaths from typhoid among the negroes and only nine cases reported, and nine deaths among the whites and only thirty-five cases reported. This gives an apparent mortality of 40 per cent, whereas the physicians in that city must be unusually incompetent if the mortality from typhoid fever exceeds 10 per cent. The probability, therefore, is that only about one case in four was reported.

Adopting Street Grades

WHEN a municipality awakens to the necessity of improving the appearance of its streets it too often finds that the first requisite is modifying the grades which, in many cases, have never been officially established at all, the roadway and sidewalk simply following the natural surface. The opposition aroused by abutting owners who have built houses and stores to fit the existing grades frequently makes this one of the most unpleasant and for the time being unpopular duties of council, engineer and all concerned. It cannot be too strongly impressed upon councilmen and city engineers that the proper time to establish the grade of a street is when the street is first laid out; and if there is any part of the city where grades have not already been adopted or where those adopted years ago are now realized to be inadequate to modern conditions the matter should be remedied at once, for the difficulty and expense, and the inconvenience to abutting owners, will increase each year. It is an injustice to prospective builders not to furnish them with established grades which they can rely upon as those which will be retained during the life of the structures which they are proposing to build, and it seems to us that owners are amply justified in demanding large damages when, an established grade having been denied them previous to construction, the final grading of the street leaves their property at an objectionable elevation above or below the sidewalk.

Massachusetts Bureau of Statistics

THE working of the Bureau of Statistics of the State of Massachusetts has been investigated and reported upon by Harvey S. Chase, at the request of Governor Foss, the report being dated April 21 of this year. In 1903, when it was first proposed to establish this bureau, a large delegation from the cities and towns of the state came to Boston to oppose the bill, and Mr. Chase states that it is a striking testimony of the necessity of the law that there is now scarcely a municipality or any intelligent official therein who is antagonistic to the work of the bureau. "Without uniform classifications and comprehensive statistics the administrators of our towns and cities have been in the past very much at sea," says Mr. Chase. "The same experiments, almost without number, have been tried in one city after another, and many of them have failed dismally. One town was not able to profit by the knowledge of another town. One city could not utilize another city's experience. There was entire lack of co-operation, while puerile and futile financing was alarmingly frequent." At present, however, "clearness of statement is taking the place of unintelligible summaries and prolix details. Simplicity and accuracy of bookkeeping, proper standards of classification, sound methods of financing, sufficient provision for sinking funds are now recognized as not impracticable."

It is true that the statistics collected by the bureau have revealed the existence of many abuses in city finances, and to this extent may have been objectionable to the cities whose delinquencies were thus discovered; but the credit of these cities and the state at large has benefited. It was found that over $850,000 of trust funds and cemetery perpetual care funds, left in trust to cities and towns, had been appropriated and used for current expenses. Towns have been paying 6 per cent interest on trust funds which they have used for current expenses, whereas equal sums could have been borrowed at a much lower rate. Over $1,000,000 of outstanding obligations have no provisions whatsoever for payment, such as sinking funds, other than the general taxing power. In a number of cities loans issued in anticipation of taxes are not paid by such taxes, but are renewed from year to year, the unpaid loans frequently enormously exceeding the tax balance available for paying them.

The expense of the municipal statistics division of the bureau was $1,440 in 1906, and has increased to $21,700 in 1910, with an estimated expenditure of $23,668 for 1911. These expenditures cover the collection and publication of annual municipal statistics, the installation of standard methods of accounting in towns and cities and the preparation and certification of town promisory notes. This last was added to the duties of the bureau since it was learned that municipal notes had been forged to a total of over one million dollars; and the preparation of forms for town notes and methods of handling and certifying them at the present time occupies a considerable part of the activities of the division.

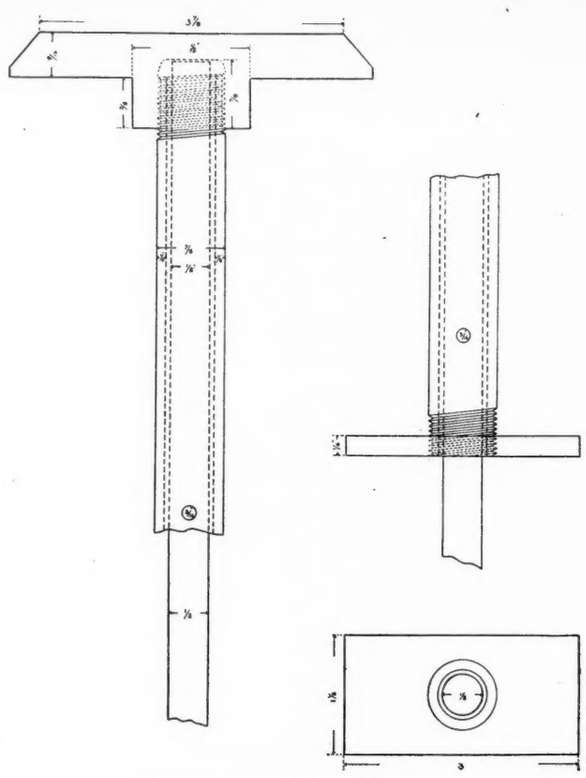
"The development of the classifications of municipal statistics has been exceedingly laborious, and has been adjusted as closely as practicable to the standard classifications of the U. S. Census. The office staff of this division has been completely reorganized, and four experts in municipal statistics have been engaged, two of whom have had practical experience as city and town auditors for many years, while the other two have had experience as special agents of the U. S. Census in relation to municipal matters in various sections of the country." The salaries of the administrative staff total $9,020. Mr. Chase states that he is "gratified to find excellently designed daily time sheets in regular use throughout this department."

Accompanying this report is an urgent recommendation to the Legislature to pass bills specifying the purposes for which, and for which only, issuance of city and town debts may be permitted. At the present time many cities and towns are issuing bonds for expenditures which should be included in the tax rates, which, in addition to the issuance of notes in anticipation of the collection of taxes and in excess of the same, has resulted in the concealment of the real financial condition of the town.

HOUSE CONNECTION MARKER

We have learned from a number of cities of difficulty experienced in finding the Y's or house connection pipes of sewers, where these connections were not carried to the house at the time the sewers were built. Ordinarily the inspector or the engineer locates the Y by its distance from the nearest manhole, but it seems to be a common experience that errors are more or less frequent, and that the Y's (or the ends of the house connections, where these are carried to the curb) are sometimes found from one to five feet away from the spot indicated.

To meet this difficulty the city of Newark has adopted the use of steel rods placed vertically just inside the curb at the end of the house connection. (When constructing sewers all house connections are carried to the curb and stopped there, if the house is not yet ready to be connected.) One of the rods used is made of ½-inch round steel, pointed at the lower end, and 5 or 6 feet long, to the top of which is fastened a casting to serve as a marker, the rod being set so that the casting comes flush with the ground just inside the curb. This



OLDS HOUSE CONNECTION MARKER.

top casting is in the shape of an octagon, flat on top and with a shank on the underside bored to receive the rod snugly when hot and be held firmly in place when the iron cools. The least diameter of the octagon is 3½ inches. The letter S is cast on the top of the head. A ¼-inch steel plate 1¼ inches wide and 3½ inches long is bored to slip over the rod and provided with a set screw by which it is held at any point desired on the rod. The object of this plate is to anchor the rod in the soil so that it cannot be pulled up out of the ground. This rod is driven into the ground at the end of the house connection before the trench containing the latter is back filled, so that there can be absolutely no mistake about its being correctly placed. These cost 50 cents each.

A modification of this rod has been patented by David Olds of Newark, this consisting of ½-inch round rod over which slips a ⅞-inch iron pipe threaded at the top and bottom and provided with a number of 3/16-inch holes. On the top of the pipe is screwed a cast-iron cap similar to the one described above, and on the bottom of the pipe is screwed a plate 1½ by 3 inches to serve as an anchor. This pipe and rod serve to make a combination rod of adjustable length, a nail being run through the proper hole in the pipe and resting on top of the rod.

LEATHER ROADS

Experimenters in road material appear to be trying almost every known substance which is not too expensive, from the hardest, like steel and glass, to softer materials like cork and rubber. At Handsworth, England, a road has been in use for about a year which was constructed of tar and leather and is said to have worn very well. The leather used was obtained in the form of waste and chippings from leather manufacturers. Discarded scraps of leather were taken and cut into small pieces and added to bitumen, asphalt or tar heated to a suitable consistency. After making this into a uniform mixture it was spread upon the ground and stone or gravel was spread on the surface. It is claimed that by the combination of leather with the substances named a material is produced which is readily applied in a mouldable condition and which stands very considerable wear, gives little or no dust, is very resilient and silent, and offers good foothold to horses.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Brick Paving on Grades of Busy Streets

Newburgh, N. Y.—One of the most important results of the visit of Newburgh councilmen to up-river cities last week as the guests of the Merchants' Association is the removal of doubt as to the adaptability of brick for repaving Water and Colden streets. Some question had been raised whether brick would give horses sufficient "footing" in hauling heavy loads up grade, particularly that at Clinton square, and one or two wholesalers entertained such doubt as caused them to express to Council a wish for the retention of the cobbles. Newburgh's representatives found that in Kingston steeper grades than that at Clinton square are paved with "hillside" brick, which is satisfactory in all respects. Teamsters were questioned and without exception told the Newburghers they preferred the brick to noisy, dirty, rough cobblestone. Brick presenting a comparatively smooth surface, they can make better time, there is less strain on horses and wear on vehicles, and larger loads can be hauled. Slippery conditions are so rare as to hardly merit mention. During and immediately following incessant rains there is necessity for caution in negotiating a grade paved with brick, but traffic is not inconvenienced to any considerable extent and the pavement quickly dries off. A marked improvement in trade is reported by merchants in streets where brick has supplanted cobble, which was more or less shunned by automobiles and light vehicles, the modern pavement appealing to all classes of drivers and permitting an unobstructed and natural flow of traffic through the business arteries of the city. The Merchants' Association is a unit for a modern pavement in Colden and Water streets, and Kingston's experience with brick disposes of the only objection that has been or could be raised against the use of that material.

Convert Canal Bed Into Boulevard

Cincinnati, O.—The Association for the Improvement of the Canal, which recently won a victory in securing the abandonment of the canal bed, with the idea of converting it into a boulevard, met last week with representatives from 50 civic organizations to discuss the programme for the future. Speeches were made by President George Balch and Park Commissioner L. A. Ault. Mr. Balch took no credit to himself for what had been accomplished but asked that the organization be kept intact and that the work of providing for a boulevard and subway system be pushed as rapidly as possible. Mr. Ault, not speaking for the Park Commission but giving his own ideas, believed that when the boulevard was laid out the city should acquire property along the line of the present canal which could be converted into small parks or breathing places which could be so beautified that they would make the proposed boulevard one of the finest in the country. The actual progress of the work is now out of the hands of the Association and future action must be determined by Council.

Preparing to Oil Streets for a Test

Binghamton, N. Y.—Within a few days the task of oiling Front street from Main street to the intersection of Oak street, and Riverside Drive will be undertaken by the Street Department. A force of men, with the aid of the new scarifier, has been engaged in leveling the uneven places in the macadam roadbed, and these are being rolled down preparatory to treatment. The roadway will then be coated with an oil preparation warranted to harden and present a smooth durable surface that will last through several hard winters. From Oak street westward along Riverside Drive the roadway will be treated with an oil preparation by an Owego concern, and these two stretches of highway will be made a test of the wearing qualities of the two materials.

Rushing Work on New Asphalt Repair Plant

Erie, Pa.—Steel framework for the municipal asphalt plant is going up rapidly, and the building will soon be enclosed. Machinery is beginning to arrive, and two carloads of raw asphalt are on the ground ready for mixing. Material received will be used for patching pavements. Much repair work is needed on city streets, and a considerable amount of new paving is to be done as soon as the plant is put in operation. Arrangement of the local plant has been with the idea of economy in labor, and it is expected that two men will be able to operate the plant. Paving material will be loaded at the plant into dump wagons and hauled to where paving is being done with scarcely a hand touching it.

Road Building Experiments

Washington, D. C.—Experiments are being continued by the office of public roads of the Department of Agriculture to determine the best form of binder to use for road surfacing, preserving the road and laying the dust. Many of these experiments were carried out last year in co-operation with Cornell University. Tar, oil and oil-asphalt preparations have been used, and one road has been surfaced with the new oil concrete that has been developed by the department. The roads as a rule have stood up well to average heavy traffic, but it is still too soon to give a final verdict on the several materials used. The department says that if the several states would improve even 20 per cent of their roads the saving in transportation charges and the enhancement of real estate values would amount to from half a billion to a billion dollars annually.

SEWERAGE AND SANITATION

To Send Drainage Expert

Charleston, S. C.—Congressman Burns has received assurances from C. G. Elliot, chief of the drainage division of the Department of Agriculture, that in a short time an expert from his department would be sent to the Brighton section of South Carolina. He will work in what is known as the "Brighton drainage district." This will be done as soon as the people of that section have complied with the State law bearing on the drainage in the section.

Sanitary Rules in Meat Markets

Richmond, Va.—For the protection of the public health a new set of rules and regulations for the sanitation of slaughter houses, packing houses, markets or stalls used in the sale or distribution of meat or meat products, has been issued by the State Dairy and Food Department. The rules go into detail regarding the care and protection of foodstuffs of this character, and, having been approved by the Commissioner and State Board of Agriculture and Immigration, have the full force and effect of law. The Dairy and Food Department has recently paid especial attention to the construction and equipment of abattoirs, with a view to lessening the danger to public health resulting from improper buildings and incorrect maintenance. Visits have been made to some of the cities of Virginia by officials of the department, and in practically every instance the local authorities have shown hearty co-operation.

Drinking Cup Law to Apply to Soda Water Fountains

Denver, Col.—Dr. Sherman Williams, president of the State Board of Health, has announced that all soda fountains and public drinking places will be required to install a sterilizing plant at once. This affects practically every drug store in the State. The proprietors of the drug stores are asking why restaurants, hotels and saloons, where public cups are used, are not similarly affected by the new law. Senator Sharpley, the author of the public drinking cup bill, is also City Health Commissioner. Dr. Sharpley declares that the law was never intended for the interpretation given to it by the State Board of Health.

WATER SUPPLY

For Pure Water

Buffalo, N. Y.—Plans for treating the city water with hypochlorite of lime have been prepared by George W. Fuller, the expert engaged by the Commissioner of Public Works. They will answer as a basis from which to start in an effort to secure pure water for the city. The plans include provisions for the administration of varying quantities of the sterilizing agent, depending on the amounts of water being pumped. There would be a laboratory in the building and tests of the water would be made frequently, probably both before treating, to determine the amount of the hypochlorite necessary in the water running, and of the sterilized water, to ascertain if its quality had been merely improved from the standpoint of safety or been made undrinkable by too large doses. There would also be solution tanks and mechanical mixers. The chemical treatment of water was tried with unpleasant results in Niagara Falls not long ago, but it may be that such an apparently complete plant as is suggested for Buffalo, attended by a chemist, would work more satisfactorily. The estimated cost of the building and appliances, including salaries and the usual unforeseen additional expenditures in public enterprises, appears reasonable. Moreover, some treatment of the water for persons unwilling or unable to buy pure water or to boil or filter the family supply as it comes from the tap should be provided as soon as possible. The best way would have been to build a filter plant, as so many cities have done in the last few years, instead of the costly and unnecessary duplicate pumping station.

Filtration Plant to Be Completed

Philadelphia, Pa.—Work on the completion of the Queen Lane filtration plant, which will have a capacity of 80,000,000 gallons a day, was started last week. It is expected that the plant will be completed and in operation before December 1, and the entire city will then be furnished with filtered water. Not more than six years ago, before the filtration system was first established, there were as many as 400—even 435 new cases of typhoid in a single week. As the filtration system was gradually extended to different sections of the city the number was gradually reduced to the present record, which was 11 new cases last week and only six the week before. When the Queen Lane plant is finished it is hoped the disease will be almost unknown in Philadelphia. After the Queen Lane plant is in operation the city's total filtered water supply will be about 392,000,000 gallons daily, an excess of about 67,000,000 gallons over the daily consumption. Including the Queen Lane plant, which will cost about $1,900,000, the total cost of the filtration system, including sites and construction work, will be less than $30,000,000.

Water Rates Cut

Frankfort, Ky.—The Frankfort City Council has passed an ordinance renewing the contract with the Frankfort Water Company for another 25 years at the same rate of $96 a year for fire hydrants that has been charged for the past 25 years. A new schedule of rates for private consumers is contained in the ordinance, which may slightly reduce the prices charged small consumers.

Comes from Japan to See Filtration Plant

Columbus, O.—The municipal water works and filtration plant has received another splendid indorsement from a distinguished professor in the Kloto Imperial University, of Tokio, Japan. Assistant Professor S. Oi arrived in Columbus one evening last week and spent most of the next day at the water works plant, in company with Superintendent Jackson, and when seen later declared that the local plant was the finest he had ever seen. He made an informal visit to Mayor Marshall and talked for a long time on the object of his visit and the plans of the Japanese Government in installing water works and filtration plants.

"The institution in Columbus is very fine," the professor stated, when asked regarding his tour of inspection. He is visiting all the larger cities of the country and has made a half dozen or more stops since he arrived in San Francisco two weeks ago.

Water Works Has Large Surplus

Youngstown, O.—The surplus fund in the water works department is now $162,548.08. At the end of the year the surplus was $130,000 and it has been known to be as low as $20,000. The water works department has a bonded debt of $423,000, but it is not probable any bonds will be paid at this time. Bonds for future work may be issued and provisions made to pay them out of the present surplus. The money cannot be transferred to any other department. The money may be used in connection with the Milton reservoir proposition. Bonds could be issued for building the dam or proceeding with the works in any way and the bonds made payable from the surplus fund.

Officials Inspect Water System

Reading, Pa.—Councilmen and other city officials accompanied the Water Board on a tour of inspection of Reading's magnificent and unsurpassed water works system one day last week. In automobiles furnished by public-spirited citizens they left City Hall at 8:30 a. m. and for nearly ten hours they visited and examined all the sources of supply, the reservoirs, the pumping stations and the filtration plants, and the verdict at the conclusion of the tour was one of approval. The day was perfect for the purpose and what was seen was instructive as well as interesting. It was found that six of the proposed ten beds of the Maidencreek plant had been completed, and it was apparent that it will take Contractor Howard E. Ahrens a year or two more before he is ready to turn the filters over to the Water Board. Construction work began nearly three years ago. Each bed will be 92 x 206 feet inside and have a capacity of 1,500,000 gallons per day. The entire outfit will have a capacity of 12,000,000 gallons daily, with one bed out of commission for cleaning and another for storage of sand.

City Without Water Owing to Broken Main

Marion, O.—Marion was practically without fire protection for two or three days last week as a result of the breaking of the 16-inch main which connects the pumping stations of the Marion City Water Company with the city water works system. The Little Scioto River is being deepened, and in order to allow a dredge to pass down the river it was necessary to lower the main. This was done, but the main in the river channel broke when the dredge backed into it. As the break is covered by 14 feet of water, it was necessary to dam the river above and below the break. Meanwhile, firemen had to rely on the old mains, as the water in the standpipe was exhausted. Many plants relying on the city system for water power were forced into idleness.

New Water Lands Sought in Suit

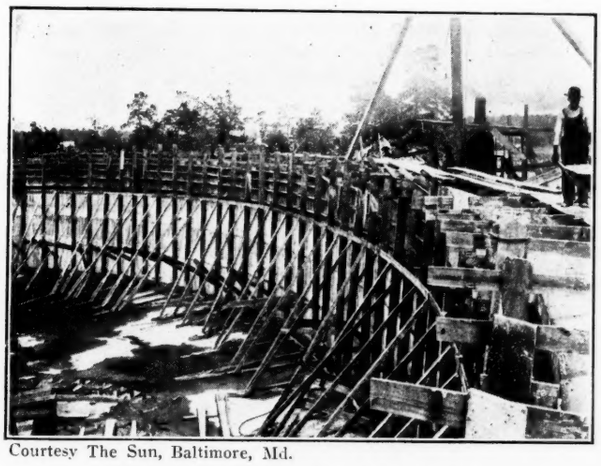
Dayton, O.—An important suit, which has for its object the appropriation of land between the hydraulic race and Mad River, near Tait's Hill, for the purpose of sinking wells and adding to Dayton's present water supply, was filed last week by the city against Rosetta C. Fisher and others in Common Pleas Court. The property sought by the municipality is about 56 acres, 55 acres of which belong to the Dayton Hydraulic Company and the remainder to Rosetta C. Fisher. It is aimed to erect an emergency reservoir and pumping station, and it is expected that the improvements will mean the addition of about 20,000,000 gallons of water a day to the city's water supply. The suit was filed in behalf of the city by Assistant City Solicitor John Roehm.

Berkeley Council Cuts Water Rates

Berkeley, Cal.—A cut in the water rates for consumers was ordered by the City Council last week by the passage of an ordinance establishing a rate of $1.25 monthly as the minimum charge to householders and revoking the old $1.50 minimum rate. This cut will make a difference of $12,700 to consumers in the city. The action followed a four hours' discussion of the proposal, which was vigorously opposed by representatives of the People's Water Company, who claimed that the establishment of such a rate would not furnish them a fair return on the amount of capital invested.

Improving Reservoir by Lining with Reinforced Concrete

Baltimore, Md.—Whether or not there may be leaks in Lake Ashburton, the Baltimore County Electric Light and Water Company is taking no chances with its reservoir on Rusk Hill, on Eastern avenue extended. Some time ago this reservoir, which is lined with brick, showed faint signs of settling. To avoid any chance of leaks developing the company started to work to line it with concrete, and the envelope, when it is completed, will, for all time, preclude any chance of seepage or breaking away. The reservoir was built about 12 years ago. On the bottom is a floor of concrete, and the walls are lined with brick. Behind this brick the concrete envelope is being built, eight inches thick at



Courtesy The Sun, Baltimore, Md.

LINING BRICK RESERVOIR WITH CONCRETE.

the bottom and five at the top. In its construction 581 cubic yards of concrete and 147,048 pounds of reinforcing steel are being used. Steel rods are being placed vertically 24 inches apart. To these are fitted horizontal rods, five to every foot, and at the bottom they are an inch and one-eighth thick, because of the heavy pressure there. The thickness of the horizontal rods varies according to the depth, being three-eighths of an inch in diameter at the top. The reservoir is 175 feet in diameter and holds 4,000,000 gallons of water. It is fed from the Herring run supply and is used as a reserve.

Locate Source of Water Supply

Akron, O.—Engineers who have been employed by the city to locate a new source of supply of water for Akron have decided on the Tuscarawas field in Springfield and Coventry townships, and will so report. An immense reservoir, the largest in the country, is to be built. It will be between four and five miles long and will be 55 feet deep. The new reservoir will make it possible to have a gravity flow into Akron and will furnish water enough for a city twice the size of Akron. The new reservoir will be located on South Main street road south of Swartz's Corners, and will extend southeasterly through the Tuscarawas valley to the Chamberlain mill on the road leading to Krumroy.

Water Commission Takes Step to Conserve Supply

Springfield, Mass.—As another step in its policy of conservation, the Water Commission, in special session last week, voted that on and after July 1, 1912, the use of water will be prohibited for the operation of direct pressure hydraulic elevators. Although a sweeping decision, nothing like hasty action can be attributed to the vote of the commissioners. More than six months ago the board took action that meant the beginning of the end of large consumption of Little River water for elevator power, by voting on December 2 to grant no more applications for water service on direct-pressure elevators, except under special conditions, which are of minor importance. Although there is much water in the supply of the Little River system, the officials of the department believe that indiscriminate use would, in time, seriously impair the fire pressure, increase the fire risks and in consequence the rates of insurance.

STREET LIGHTING AND POWER

Lighting System Inspected

Wilkes-Barre, Pa.—Members of the street lighting committee inspected the city lighting system one evening last week. The trip was made in automobiles, and had no special significance, being the regular monthly tour of inspection. The lighting of Public Square, which is now nearing completion, was referred to and the members are a unit in declaring that the contractors are making excellent progress.

Buy the Gas Savers

St. Paul, Minn.—City Chemist Roehrich has reported to the Common Council on the feasibility of renting gas regulators. Heretofore the city has installed 27 gas pressure regulators, paying a rental of $12 a month, or $144 a year. The concern renting the devices refused to sell them to the city. When the contract came up for renewal recently the question was referred to Mr. Roehrich. In his report the city chemist says the aggregate cost of gas in all buildings supplied with regulators amounts to only $940.90 a year. He believes good regulators can be purchased from $2 to $4 each. He recommends only 12 be used.

Gas Company Voluntarily Lowers Rate

Milwaukee, Wis.—Beginning this month gas in Milwaukee is 5 cents cheaper for each 1000 feet. This was announced in the schedule filed by the Milwaukee Gas Light Company with the Wisconsin Rate Commission. This makes the ninth voluntary reduction in rates for gas that has been made by the company during the last 25 years, and in the aggregate means an average of nearly $15,000 per month to Milwaukee consumers, or approximately $500 per day.

May Have to Wait Two Years for Gas

Buchanan, Mich.—Attorneys for the Niles Gas Light Company have discovered a stumbling block, which may prevent Buchanan enjoying the benefits of gas until after the State Legislature meets in 1913. An old law has been found prohibiting small towns from granting franchises to any public service corporations for longer periods than 10 years. Buchanan granted the gas company a 30-year franchise, and it will be necessary to have the Legislature legalize the transaction before the gas corporation can float bonds necessary for making the improvement.

A Notable Example of Modern Street Lighting

Warren, O.—Definite action on the part of the citizens for improved street illumination was taken about two years ago when it was decided to better the existing street lighting conditions. Open arc lamps were then in use throughout the city and as the contract for street lighting with the Warren Water & Light Company expired at that time it was thought advisable to have the new contract drawn up for enclosed arc lighting. Plans and specifications for such were made, but no further action was taken on these owing to a suggestion being brought forward to install a system employing incandescent lamps instead. A trial installation of these lamps was made on one of the residential streets and this received such unanimous approval as a satisfactory solution for the problem under consideration that the Board of Public Service decided in favor of an incandescent lighting system. The installation as it has now been put in operation employs incandescent lamps exclusively. The installation in the business part of the city in which five, three and one light ornamental standards are used is naturally the more spectacular part of the whole system. The artistic standards supporting 12 and 14-inch globes used to surround the lamps add materially to the appearance of the streets even in the daytime, and this attractiveness is enhanced by the absence of overhead wiring since this is all concealed in conduit beneath the surface of the pavement. The night illumination down town is particularly attractive and stands out in strong contrast with the gloomy ill-lighted streets with which the citizens of Warren had so long been familiar. That the people look with pride on their recent achievements in street lighting is evident from the enthusiasm they displayed on the night when the whole lighting system was formally put into commission.

FIRE AND POLICE

Fire Alarm Gives Satisfaction

Allentown, Pa.—Allentown rejoices in a new $6,000 fire alarm system, which has been tested with entire satisfaction by Chief Cohn.

New Equipment Received for Police and Hospital Service

Milwaukee, Wis.—The long awaited police hospital automobile ambulance has reached Milwaukee and will be tested out. A fifty mile run, probably to Waukesha, will be made.

New Chemical Engine Received

Macon, Ga.—The new Webb chemical fire engine ordered several months ago by the Fire Committee has arrived in the city and was immediately unloaded from the car and put together by the demonstrator, H. H. Rippey. The fire company now has two automobile fire engines and two auto chemical engines. The new engine has two 35-gallon chemical tanks, and a partition in the rear of the wagon that will carry a thousand feet of hose.

Fire Department Report Shows Improvements

Tampa, Fla.—The full report of the fire department of the city of Tampa which was completed last week shows that during the year many improvements have been made in the service, the equipment of the department has been substantially increased, and at the same time much needless expense has been eliminated from the department. The fire department of Tampa compares very favorably in every detail with the same departments of much larger cities in other States, and the work of the firefighters during the past year has shown the splendid personnel of the men on "the firing line."

Fire Engine Wrecked

Chicago, Ill.—Three members of Engine Company No. 46 were injured and their engine wrecked while responding to an alarm of fire. The engine was demolished when it overturned after a wheel had fallen off. Because of the delay of this company in reaching the fire the flames spread to two other buildings adjoining the one where they started on the north.

New Engine Is Accepted

Buffalo, N. Y.—Following a two-hour test Fire Commissioners Carl Machemer and William Person have officially accepted the fire engine recently received. In the opinion of the commissioners the test was satisfactory, and the new engine will be placed in station No. 1 in South Division street. The new engine is of the latest type. There is only one other engine in the department that will throw four streams. Most of the old-style engines are good for but two. The new engine pumps 1000 gallons a minute. It will cost the city $6,500. A similar engine has been sold to the New York Fire Department, except that it is motor driven.

Suburbs Needn't Pay for Downtown Firefighting

Spokane, Wash.—City Commissioner C. M. Fassett has determined to assess the cost of the proposed $175,000 high-pressure fire-fighting system for the business district to downtown property owners, instead of paying for it out of the water extension or general fund. The new system will eliminate the need for fire engines downtown. This procedure is made legally possible by the new water extension plan adopted by the department which provides for an assessment roll against the property when mains are extended, the same as in street improvements.

Salina's Fire Auto to Be Used as a Model

Salina, Kan.—Salina's fire automobile is destined to become famous. In the first place, it is noted because it is the only one of the kind in the world. It was designed from a common automobile by Chief Brodbeck, of Salina. The company which manufactured the car designed by Chief Brodbeck has written the fire chief, asking for a full description of the car, as they wish to build another just like it as a model to be exhibited before the International Fire Chiefs' Association, which will be held at Milwaukee, Sept. 19 to 27. Leading fire fighters from all over Europe as well as the United States will attend this meeting.

GOVERNMENT AND FINANCE

Government Investigator Finds City Controller's System One of the Best

Erie, Pa.—Accounting system in use in this city is being studied by Frederick P. Squyer, of the Bureau of the Census, Department of Commerce and Labor, who will compile his report, with 46 others which will be made by men working other cities, after which the general report will be published. Mr. Squyer states that the system used by Controller Gensheimer is one of the best which he has found in cities where he has worked.

Revenue from Old City Dock Doubled

Tacoma, Wash.—Revenue from the old city dock at Fifteenth street has been doubled since Mayor W. W. Seymour was elected, according to figures submitted to the municipal commission. Under the old administration the dock brought only $162 a month, whereas to-day leases and rentals have been signed for a revenue of $362 a month, leaving a space of 26 feet to be rented. In addition there is space provided for the free dock.

Competitive Bidding for City's Bank Deposits Advocated

Baltimore, Md.—Competitive bidding, under which banks that offer the highest rate of interest and prove their responsiblity are named as municipal depositories, is a plan in use in other cities of the country and puts Baltimore, with its unbusinesslike methods in an unfavorable light. In consequence of the competitive plan St. Louis is getting 2 per cent interest on $200,000 of deposits or less and 3.11 per cent on $500,000 or less; Detroit, 2 per cent on daily balances and 2.55 per cent on sinking fund accounts; Louisville, 3 per cent. Baltimore gets a flat rate of 2.25 per cent whether the deposits are active or inactive, and whether the sums on deposit in each bank average $100,000 or $500,000.

Guthrie Has Two Sets of City Officials

Guthrie, Okla.—Holding that the question of inaugurating a new charter for a city is a serious question and that he would not be justified in relinquishing his office until a decision is had from the supreme court, Mayor Olsmith, of the old city adminstration here will seek to have an agreed statement of facts presented to the supreme court by himself and Mayor-elect Nissley. Olsmith steadfastly refuses to give up his office. All old officials continue to hold office and refuse to turn over any of its affairs to the new board of commissioners.

Carthage to Be Annexed to City

Cincinnati, O.—Carthage will become a part of Cincinnati about July 6. Final papers have been filed. Allowing ten days for advertising will bring the time for final action about July 6. With the annexation of this village there will pass into history the first waterworks plant built and operated by any incorporated village in Southern Ohio. The plant was built in 1890. In 1893 the electric light plant was added. Since 1901 both Carthage and Elmwood have received their water supply from this source. The city water main is already laid in Carthage. It will require only about six days to make the connection to the village main.

Mayor Gives Up Salary

Meriden, Conn.—Congressman Thomas L. Reilly returned to Washington, but before leaving he announced that his month's salary as Mayor of Meriden, amounting to $82.50, had been transferred to the account of Inspector of Foods J. J. Donovan. The reason assigned is that that department is short of funds. Another month's salary as Mayor was donated toward a fund for a "safe and sane" Fourth of July celebration.

Council Passes Ordinance for Auto Tax

Evansville, Ind.—The automobile license ordinance passed by the City Council last week provides for a fee of $3 a year for two-passenger cars, $5 for four and five-passenger cars, trucks under one ton and taxicabs, and $7 for larger motor vehicles. The ordinance will be effective at once. From now until Jan. 1, 1912, the fee for full year must be paid, and after Jan. 1 payments will be for a full year from January to January.

City Officials Investigate Before Adopting Charter

Portland, Ore.—City Attorney Grant, of Portland, after an investigation of the commission form of government in Spokane, is convinced it is the most economical and efficient form of municipal government, and he is now telling the Rose City of the virtues of the plan. "I didn't hear a single unfavorable comment on the Spokane charter, but the general belief in the Inland Empire metropolis is that the people were fortunate in their choice of the first commission," said Mr. Grant. "One thing that we do not want in a commission for Portland, in my opinion, is the preferential ballot. It is too cumbersome. Outside of this feature the Spokane charter impressed me most favorably. One of the best provisions in the Spokane charter is that which eliminates politics in municipal elections. There are no primaries, but the commission officials are chosen at one election.

Vote Large Sum for Local Improvements

San José, Cal.—The bonded indebtedness incurred by the city at a recent election amounting to $377,000 provides for the purchase of the following: Privately owned horses in the Fire Department, the construction of two firehouses in the northern and southern parts of the city, the purchase of land, hose and two auto chemical engines; the extension of the fire alarm system and the installation of a police patrol flashlight system. The construction of a magnificent bathing establishment at Alum Rock Park. The development of the canyon springs and the building of bridges over the Penitencia Creek. The installation of an extensive sewer system in the Gardner District and the reconstruction of sewers damaged by floods in San José. The construction of bridges damaged last winter by floods and the straightening of creeks and the establishment of public comfort stations in city parks and grounds.

STREET CLEANING AND REFUSE DISPOSAL

New Street Flusher Being Put Into Use

Lexington, Ky.—The new street flusher, which is intended to take the place of the old dust-raising sweepers, has arrived in the city and was tried out and adjusted on Main street. The machine consists of a large circular tank on a wagon drawn by three horses. The flushing apparatus is operated by a gasoline engine in the back part of the truck, which maintains the flow of the water at a uniform pressure as long as there is anything in the tank.

To Maintain Waste Boxes

Marion, Ind.—At the meeting of the Board of Works last week a petition from Muncie capitalists seeking a franchise to place waste paper boxes on the downtown street corners was received and taken under consideration, and it is probable that at the next meeting of the board the petition will be granted, and the franchise recommended to the Council for final action. The petition came as a distinct surprise, as the negotiations leading up to its introduction had not been made public. The proposition as outlined by the Muncie men is one that has been in vogue in many other cities of the State. Photographs of the proposed boxes were presented, and from the general expression of satisfaction on the part of the members of the board there seems to be but little question that the boxes will come in a few weeks. The plan of the petitioners, who are to be the absolute owners of the boxes, is to receive all trash and waste paper, and their revenue is to be derived from the sale of advertising space on the sides of the boxes. They are about four feet in height, two feet wide and two feet deep, and the sides are of smooth iron, on which the advertisements are painted. It is stipulated in the proposition the city is to receive 10 per cent of the net profits on all advertising thus sold, and shall have the right to order the boxes removed if the advertising matter becomes objectionable or obscene. The petitioners further agree to collect the waste paper at regular intervals, thus protecting the streets from much litter and trash, which has proved a task to the street cleaning department. As now viewed the proposition means absolutely no loss to the city, with a good chance of gain. In many other cities throughout this and other states the plan is in operation and the results are said to have been satisfactory.

RAPID TRANSIT

Charter Provisions on Franchises Obstacle to Extension

Binghamton, N. Y.—What now appears to be the principal obstacle to the immediate construction of a street car line through the Clark and Fisher location in the Fifth and Sixth wards, is a provision of the charter, which limits the granting of franchises for more than 35 years and requires that the franchise shall be sold at auction to the highest bidder. The Binghamton Street Railway Company is loath to enter into any enterprise unless it can be guaranteed a franchise for a length of time that will warrant the expenditure. The question of paying for the franchise is not so serious although it establishes a precedent in this city. The sum of $1 might be sufficient if there were no other bidders, but if a rival street railway corporation should be organized here before the expiration of the franchise the law would result in a spirited competition.

Trolley Company Asks for a Franchise in Summit

Summit, N. J.—Formal application in the shape of a petition has been made to Common Council by the Morris County Traction Company for a franchise covering a period of 35 years under which the company may construct and operate a double-track trolley road from Maple street to the dividing line between this city and Chatham. A resolution designating July 10 as the time when Council will meet to consider the application was adopted. Another resolution providing for the publication of notice of the filing of the application and the time when Council will consider same was passed.

Boston Soon to Have Prepayment Cars

Boston, Mass.—The Boston elevated is shortly to place in service prepayment cars, the introduction of which will be a novelty in Boston. No date has been fixed by the management for the beginning of the operation of these cars, but it is understood that they will be run very soon. The company has 50 of these cars that have been assigned for use on the Mattapan-Dudley street line, the Jamaica Plain-Dudley street line and the Medford-Sullivan square via Winter Hill line. The new cars are not only unlike any of the company's present cars, but differ in important respects from the prepayment cars operated in other cities. They were designed by the company to secure maximum safety, high speed, large capacity and the greatest possible comfort.

Council Discusses Car Tracks

Pittsburg, Pa.—City Council sitting as its Committee on Public Works considered from various angles the methods of track construction now in use by the Pittsburg Street Railways Company in so far as they relate to the streets of the city. The company was the target of not a little adverse criticism for the condition of its trackage, but the object of attainment chiefly desired was to arouse a new spirit between the company and the city, where by a plan of reciprocity might be formulated to be followed in the future.

Win Five-Cent Fare Fight

Chicago, Ill.—Alderman Fisher's long and persistent battle to force the Chicago City Railways Company to extend its lines from West Seventy-ninth street to the southwestern city limits at One Hundred and Nineteenth street bore fruit when the Council Local Transportation Committee was empowered last week to appraise the value of the lines of the Chicago Southern Traction Company within the city limits, preparatory to their purchase by the first named company. If the purchase is made, and it is expected that there will be no hitch in the proceedings, the local traction company will acquire all of the properties of the interurban company within the city limits, thus assuring the residents of Morgan Park and adjacent suburbs a 5-cent fare to the downtown district. Representatives of both traction companies appeared at the meeting of the Council Local Transportation Committee and assured the members that both sides had tentatively agreed to the proposed purchase, at a price to be fixed by the committee. "It was a long fight," Alderman Fisher declared after the meeting, "but we finally won out in our contention that the residents of the southwestern part of the city are entitled to a 5-cent fare to the city."

MISCELLANEOUS

The Abolition of Public Markets Being Agitated

New Orleans, La.—In connection with the building of the new Dryades public market by the city and the talk of screening the markets, etc., one of the leading public officials has suggested that it might be a good thing to look into the question of whether it really pays the city to own markets and lease stalls. The annual revenue is something over $200,000. The city owns the principal markets and there are others that have been erected by private persons under a contract providing that they are to revert to the city. From those really owned by the city it secures revenues amounting to something like $25 a month per stall. If the city gave up the market-owning business, sold the material in the markets and had them pulled down, used such parts of the land for parks or playgrounds, or schools as might be available, if any, and sold the remainder, it would secure a considerable amount of money that could be used for schools or other purposes.

Ordinance Provides for Employment of City Planner

Albany, N. Y.—Alderman Sherman F. Murphy, of the Fourteenth ward, introduced an ordinance in the Common Council providing for the employment of a city planning expert. The ordinance was not drawn and was noticed for passage at the next meeting by its title. As there will be no further meetings of the Council until September there can be no progress made during the summer in working out a comprehensive and systematic plan of city improvement, particularly the river front. The City Planning Association is back of the ordinance and desired its passage to enable the expert to work out the plans during the summer so that action might be taken to carry them into execution in the fall.

Swimming Pool Open July 15

Toledo, O.—The first municipal swimming pool will probably be opened July 15, when the pool in City Park is expected to be ready for the children in the vicinity. The excavation has already been made and the concrete work will be started before another week. Work has already been started on the comfort station there.

Band Concerts in City Parks

Toledo, O.—The people will probably be able to enjoy free band concerts in city parks in the near future, as $1,500 was appropriated for this purpose by the finance committee of Council last week, and Council will vote upon the appropriation at its next meeting. It was asked that $3,000 be appropriated for the concerts, but this amount was cut in half by the committee. A committee of three will be appointed to select the band which will give the concerts.

Inspect Work Done in Parks

Syracuse, N. Y.—The first of a series of inspections of the city park improvements to be made by Mayor Edward Schoeneck and heads of departments with the Syracuse Park Commission took place one day last week. They found nearly 225 men at work under the supervision of the commission, making it one of the important employers in the city. At Lincoln Park a steam shovel is in use under contract, doing heavy grading, and in the other larger parks men and teams are engaged building roads and doing permanent work. A large amount of work is also being carried on under the supervision of the Bureau of Parks of the Department of Public Works. This is along lines of maintenance and care of grounds, trees, shrubs, flower plots, repairing walks and drives and general work which comes every year.

Park Shelter House

Muncie, Ind.—The shelter house in McCulloch Park, erected by the city at a cost of $5,000, is about completed and soon will be ready for use. When it is thrown open to the public the principal objection to this beautiful pleasure resort will have been overcome. In the past there was no place in which the visitors at the park could go in case of the sudden coming up of a storm. The shelter house has been made modern in every respect and in addition to furnishing shelter during inclement weather has many other conveniences.

Studied Municipal Problems in East

Los Angeles, Cal.—Miles S. Gregory, Councilman, is home after an absence of a month in the East studying municipal problems. One of the most important changes which he recommends as a result of his investigations is in the method of street paving. He believes no street should be permanently improved until all water, gas and sewer mains are laid and laterals extended inside the curbs. This method, he believes, would do away with the necessity for tearing up paved streets and would result in the pavements wearing much longer. He also favors grooved rails for car tracks as recommended by the City Engineer in an exhaustive report presented to the Council several weeks ago.

City Opens Drinking Fountain

Chicago, Ill.—The first sanitary public drinking fountain installed in the new city hall was put in service last week. It is located in the south corridor on the first floor, near the Washington street entrance, and is being used by hundreds of men and women. The new fountain is in the form of a lion's head projecting from the wall.

Voting Machines to Go

East Orange, N. J.—The last seven voting machines which were used last fall in East Orange, are to be forwarded to Trenton, in care of the Secretary of State, without further delay. East Orange has been paying storage on them for the past seven months.

Playgrounds for the School Yards

Albany, N. Y.—William J. Armstrong, the new commissioner of education, has secured the adoption by the board of his policy for playgrounds in the school yards, and the sum of $600 was set aside to properly equip grounds at Schools 4 and 11 and later at School 3. There are many large yards surrounding the school buildings and they have not been permitted to be used by the pupils, according to the original intention.

Commissioners Enjoined from Building Municipal Stables

Washington, D. C.—Citizens who have protested against the establishment of municipal stables on E street southeast between Thirteenth and Fourteenth streets won a partial victory when Judge Stafford, in the District Supreme Court, granted a preliminary injunction against the commissioners. The citizens of that neighborhood have been agitating a movement against the placing of the stable there for some time, and failing to get a reply from the commissioners favorable to their cause, went to court. In granting the preliminary injunction Judge Stafford said that he was not sure whether Congress in appropriating money for a stable wanted to give the commissioners full discretion as to where to place the stable, or whether it was the intent of Congress to continue the stables where they are at present, namely, in the square bounded by N and O, Ninth and Tenth streets northwest. The commissioners will present fuller details of their side of the case at a hearing before Judge Stafford in the near future.

City Receives Fountain

Toledo, O.—Profoundly impressive exercises marked the unveiling of the beautiful drinking fountain in front of Memorial Hall last week. Mayor Whitlock, Mrs. Elizabeth Mansfield Irving and Mrs. Kate Brownlee Sherwood gave addresses. The fountain is a gift to the city by the women of the Citizens' Committee of the national G. A. R. Encampment held in Toledo a few years ago.

Municipal Home for Free Lodging

Cincinnati, O.—The new municipal lodging house was opened last week. Fifteen lodgers were registered the first night and Superintendent Peter Long said employment was found for 20 men the first day. The institution will be conducted strictly along business lines, and no person found to have contagious diseases of any kind will be admitted. Anyone applying for lodging is sent to the basement and ordered to take a bath, after which he is subjected to a physical examination by Dr. S. Wolf, the attending physician. If a person needs medical treatment for contagious diseases he will be sent to the city hospital. The employment bureau will be conducted in connection with the lodging house.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Officers' Salaries—Power to Regulate.

City of Belton vs. Head.—A statute providing that the city council shall, on or before the first day of January next preceding every election, fix the salary of the office of mayor, which compensation shall not be changed during the term for which the mayor is elected, is not mandatory; and where the council fails to fix the salary on or before January 1st, it may do so at any time before the general election; and where the council at a regular session on December 9th fixed the salary, it could, after January 1st following, and before the general election, fix the salary at a less sum, and the mayor elected at the regular election following could only receive the latter sum.—Court of Civil Appeals of Texas, 137 S. W. R., 417.

Assessment of Street Railway—Validity.

City of Newport vs. Silva.—Kentucky statute as amended and reënacted by Acts 1910, relating to the control and improvement of streets in cities of the second class, and an ordinance pursuant thereto, providing that the tax against a street railway company for its portion of the paving or improvement of a street shall constitute a first lien on all the property, assets, and franchises of the company within the corporate limits of the city, is not invalid, though providing a different method of assessment against street railroads from that against abutting property owners.—Court of Appeals of Kentucky, 137 S. W. R., 546.

Contract Allowing Connection With Sewer Before Completion.

Hart vs. City of New York.—The specification for construction of a sewer for a city, providing that the commissioner should have the right to connect any sewers with such sewer, or grant permits to any persons to make connections therewith, at any time before its completion, did not contemplate that before completion of the sewer sewage should be drained into it through such connections, and so the city, having carried débris into such sewer before its completion through such connections, was liable for the extra work of cleaning it out; such construction being made clearer by other specifications requiring the contractor to take care of sewage running through old sewers actually in operation, and intercepted by the new sewer, while no such provision was in the specification as to connections with the new sewer prior to its completions.—Court of Appeals of New York, 94 N. E. R., 219.

Public Improvements—Assessments

Hardy vs. City of Waukesha.—Under Statutes 1898, providing that a city may improve streets, and that the expense may be paid in whole or in part by the city or by the property benefited as the Council shall direct, but in no case shall the amount assessed exceed the benefit accruing, an abutting owner is liable for his proportional amount of the actual cost of the work, and is not liable for the full amount of an assessment based on an estimate in excess of what the improvement actually cost, providing that the contractor shall be entitled to a certificate as to each parcel of land against which benefits shall have been assessed, for the amount chargeable thereto, being a plain recognition of the idea that the amount chargeable is not necessarily the amount of the assessment.—Supreme Court of Wisconsin, 131 N. W. R., 352.

Ordinances—Nuisances—New Regulations

Sioux City vs. Simmons Warehouse Company.—Where one erects a building over a stream without leaving an opening of the size required by ordinance for flow of the water, the city may, if it sees fit, in the public interest, instead of having the building abated as a public nuisance, make a new regulation on the subject for taking care of the waters in cases of flood, compliance with which shall render future maintenance of the building lawful, so far as concerns compliance with the ordinance.—Supreme Court of Iowa, 131 N. W. R., 17.

Sub-contractors' Liens—Substituted Fund.

Milliken Bros., Inc., vs. City of New York et al.—Under the Lien law providing for the discharge of a lien on the amount due a contractor for a public improvement by the deposit of a sufficient sum of money, a valid lien on the primary fund must first be established to justify payment of the deposit, and lienors are not entitled to have the claims for which they recover merely a personal judgment paid out of such fund without first establishing such lien on the fund, notwithstanding subdivision providing for the discharge of the lien by execution of an undertaking, and Code Civil Procedure authorizing a recovery by a lien claimant of a personal judgment when he failed to establish a lien, as such substituted liability cannot be greater than the original liability without express statutory direction, and no such direction relating to the deposit of money is in the statute, however it may be as to the undertaking.—Court of Appeals of New York, 94 N. E. R., 196.

Defects in Street—Contributory Negligence

Frazee vs. City of Cedar Rapids.—In an action against a municipality for injuries from plaintiff's horse taking fright at an obstruction in the street, an instruction imposing on plaintiff the same care in driving by the obstruction as required of the city to gain knowledge of the obstruction, and a greater degree of caution, if he knew the horse was not under the same control as ordinary horses, is erroneous, since it imposes upon the plaintiff a greater degree of care than that of ordinary care and caution.—Supreme Court of Iowa, 131 N. W. R., 33.

Personal Injuries—Defective Sidewalk

Webb vs. City of Philadelphia.—In an action against a city for injuries caused by falling into an open unguarded areaway in a street in a thickly populated part of a city at night, the question of defendant's negligence was for the jury.—Supreme Court of Pennsylvania, 79 A. R., 874.

Bonds of Officers—Defenses

City of Newburyport vs. Davis.—Where a city has made out a prima facie case in an action against the sureties upon its Treasurer's bond, and is entitled to a judgment for a breach, a restitution by the Treasurer from the proceeds of notes wrongfully issued by him in the name of the city, all but one of which the city has been compelled to pay, and is defendant in a pending action upon that one, is not a good defense.—Supreme Judicial Court of Massachusetts, 95 N. E. R., 110.

Changing Grade—Statute of Limitations

In re Grade Crossing Com'rs of City of Buffalo.—The right to recover consequential damage resulting from the lowering of a grade of a street without the taking of any land therefor, as authorized by Laws 1888, as amended by Laws 1890, authorizing the elimination of grade crossings in Buffalo, and providing that damages may be awarded to persons whose property may be injured thereby, is barred by the six-year statute of limitations; the right to recovery being statutory only.—Court of Appeals of New York, 94 N. E. R., 188.

Special Street Assessment Proceedings

City of Chicago vs. Partridge.—While the purpose of a special street assessment proceeding is to impose a burden upon property, and not upon the owner, and is therefore a proceeding in rem., the res is not the street to be improved, but the property sought to be burdened, and a judgment regularly entered is conclusive as to the res against the whole world, as to all matters determined in the proceeding, yet as it is the judgment which constitutes the estoppel, and since a judgment entered in a special assessment proceeding is, in effect, a several judgment as to each parcel of land assessed, and each parcel, so far as the judgment is concerned, is a separate res, where a judgment in such proceeding confirmed the assessment, as to one tract, the owner not objecting, and as to other tracts, the owners of which objected, sustained the objections and dismissed the petition, the judgment sustaining the objections cannot be interposed by the owner of the property as to which the assessment was confirmed as a bar to an assessment against his tract in a later proceeding.—Supreme Court of Illinois, 94 N. E. R., 115.

MUNICIPAL APPLIANCES

Snow Melting Machine

A snow melting machine has been designed by Nathan C. Johnson, 109 Luzerne avenue, Pittston, Pa., which is intended to eliminate the difficulty hitherto experienced with machines of this general character. In operation snow melting machines begin melting snow rapidly, but are soon overloaded and fail to do efficient work. This difficulty the inventor overcomes by getting rid of water by centrifugal action as soon as it is formed, by the application of heat to the exterior of relatively small masses of snow and by other means. The capacity of the machine is 350 cubic yards of snow per hour.

The practicability of snow melting as an economic proposition is seemingly easily demonstrated. To convert one pound of snow from and at 32 deg. F. into water at the same temperature requires 144 heat units, B. T. U. Snow weighs from 5 to 25 pounds per cubic foot. Assuming 12 pounds as the average a cubic yard weighs 324 pounds. To melt this would require 144 x 324 or 46,656 B. T. U. Allowing a fuel efficiency of the furnace of 5 per cent doubles this quantity, making it 93,312. The inventor proposes to use low grade kerosene, worth 4 cents per gallon, as a fuel. The heat value per pound of kerosene is 20,000 B. T. U. and a gallon of kerosene weighs about 7 pounds. The cost of fuel on this basis is $93,312 \div 20,000 = 4.165$, the number of pounds of oil required to melt a cubic yard of snow. This would cost, omitting fractions, $\frac{4}{7} \times 4 = 2.3$ cents. It goes almost without saying that fuel must be the large item of cost in a melting machine. The inventor, however, has figured up costs of labor, maintenance and repairs under reasonable working conditions. These items are inconsiderable, about half a cent a cubic yard, on the basis of a machine working successfully 50 days in a year. As compared with the small cost of melting snow on this basis, which it is true is theoretic, is the well-known fact that snow removal by wagons costs anywhere between 20 and 40 cents per cubic yard, about ten times as much. In this calculation two items are disregarded—the heat necessary to raise the snow up to 32 deg. F. when it is below that temperature and the possibility that the waste water may be at a higher temperature than 32° F. However, as the specific heat of snow and water are small items as compared with the heat absorbed by the melting of ice the general argument is not seriously affected.

The apparatus consists in general of a wheeled truck (A) propelled by any suitable means, carrying an outer shell or casing (B) having within it a revolvable shell (C) formed of tubes carried between two heads keyed to a central shaft, the tubes being heated by means of kerosene burners and having spaces between them; an inner revolvable member (D) having on its periphery a screw or worm; a scoop plow (E) suspended beneath the truck and in connection therewith two spiral conveyors (F, F) leading backward to a hopper (G) which leads to the interior of the drum.

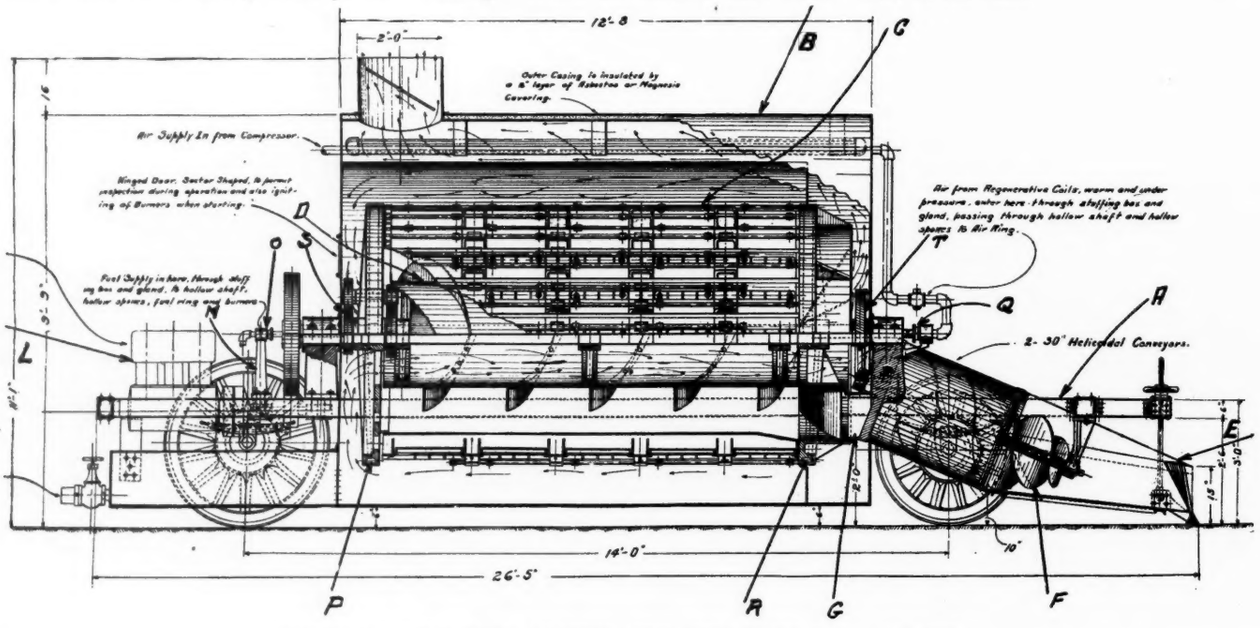
Disposed on an extension of the truck platform at the rear is an auxiliary engine (L), which rotates the device, and also an air compressor (M) driven by the auxiliary engine, the function of this latter being to supply the air necessary for combustion.

Fuel is supplied under pressure through a stuffing box (O) carried on the standard (N) and a pipe which leads to a hollow in the main shaft, connecting through hollow spokes with an annular ring cored in the left drum head (P), and from this ring fuel is conveyed to the burners by pipes securely mounted on each tube. At the opposite end air is delivered in a similar manner through a stuffing box (Q) through hollow shaft to an air ring cored in a similar manner in the right hand drum head (R), from which pipes mounted on each tube carry it to the burners and air jackets as it is needed.

In starting, the burners of each tube are ignited separately by means of a row of blue flame burners introduced at the rear end through an opening in the casing. When all burners have been ignited and are burning properly the auxiliary engine is thrown into gear, revolving the outer drum and turning the inner worm in an opposite direction by means of the planetary gears (S) and the screw conveyors by means of the gears (T,T).

In operation, as the machine is propelled forward, the scoop plow (E) gathers the snow from the street, compressing it slightly as it moves backward toward the machine, where it is caught by the screw conveyors (F) elevated some 18 inches to the hopper (C), where it is caught up by a series of knives or vanes of sheet metal, marked (H) on the illustration, fastened to and revolving with the open annular chamber formed by the flanges on the forward drum head (R). These knives or vanes throw the snow backward into the space between the outer and inner revolvable shells, and the snow falling against this outer rotating drum quickly attains its direction and speed of rotation. As more snow is thrown in by the knives it piles up at the forward end, when the worm on the inner revolvable shell catches it and cuts off all beyond a certain depth, carrying this surplus to a point further along where it is again caught up by the melting tubes. By this means an even distributing of snow is maintained throughout the entire length of the outer revolving drum, and as the inner surface of this drum is highly heated by means of the kerosene burners contained within its constituent tubes melting goes on very rapidly.

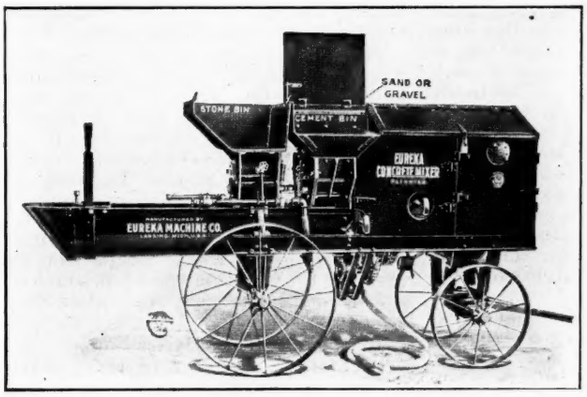
The centrifugal force due to rotation is employed to throw the melted snow outwardly through the slots between the tubes into the outer casing, where it is caught and collects in the reservoir beneath the machine and may be taken through a hose directly to catch basins and sewers. The shape of the tubes assists this action and at the same time the unmelted snow is prevented from passing through the slots or packing too closely near them by the projecting lugs which interlock over these openings. This centrifugal action has also a further function in that the outward pressure of the snow against the melting plates secures intimate contact between them and consequently a more rapid heat transfer than would otherwise be the case.



JOHNSON SNOW-MELTING MACHINE—3500 CUBIC YARDS DAILY CAPACITY.

All air supplied to the burners, both for carrying the vaporized oil and that necessary for combustion, is regenerated (1) by the coils of pipe in the upper portion of the casing and (2) by providing air jackets on the melting plate covers. Further heat economies are also obtained by passing all waste gases through the central or distributing worm, heating it somewhat and serving as a means of preventing the snow sticking to or "building up" on this member. These details may be seen by reference to the cut.

Each heating tube is provided with five burners, any one or all of which may be removed without affecting the operation of any of the others. Each has its separate air and oil valves and is capable of being independently regulated. In addition the fuel supply can be cut off from all burners by a stop cock on the outside, so that the fire is under control at all times.



NEW MIXER FOR SMALL WORK.

Another important feature is the means taken to gather the snow from the pavement. Two contingencies are to be provided for: (1) the prevention of refuse other than small refuse or ashes, entering the machine and (2) the cleaning of pavements thoroughly without subjecting the plow to shock from striking projecting manholes or irregularities in the pavement. The first of these has been met by putting in the front of the plow a series of flat bars, forming a grating so arranged that refuse of any considerable size will be pushed to one side while snow is freely admitted. The second contingency has been met by placing at the lip of the plow a triangular iron bar, pivoted in bearings at either end. On a smooth pavement this bar will cut close to the pavement by reason of the drag of the lower rear edge, but should an obstruction be met this drag will be overcome and the bar will turn, thus walking over the obstruction without damage.

Crushing Plant

Raymond W. Dull & Co., Aurora, Ill., have applied for patents covering an arrangement of stone crushers and screens which they believe will revolutionize present methods.

The material is delivered from a preliminary screen to the main belt conveyor, which is located either over bins, on a trestle or in a gallery over storage piles. The conveyor has a combination tripper and screen over each bin or storage pile, which takes out one or more sizes of material and returns the remaining aggregate to the belt which carries it to the second tripper, over the second compartment, where one or more sizes are separated from the whole, and the remainder returned to the belt and so on, until as many sizes as desired are obtained. The trippers with the screens are arranged to travel along a track which enables operators to build a long pile of each material.

Concrete Mixer for Sidewalk and Curb Construction

The accompanying cut is a new type of mixer the Eureka Machine Company, Lansing, Mich., have recently placed on the market. It is built principally for sidewalk contractors and other small users of concrete. It is also a very handy and profitable equipment for curb and gutter work. The makers state that it is constructed similar to their larger equipments, only smaller in size, weight and capacity. The same patented automatic feeding arrangement is used as in their other types. The mixing process is also the same. Instead of changing to cheaper power, as might have been done on a smaller equipment of this kind, the mixer is equipped regularly with a 2½-horsepower New Way gasoline engine. One lever starts and stops mixer; another lever controls the feeders. The guaranteed capacity is five to eight cubic yards an hour.

The cut shows mixer with three bins, for handling cement, sand or gravel and crushed stone. The stone bin is left off when not wanted. The cut also shows mixer with rotary pumping attachment and suction hose. Where city water is used altogether the pump can be eliminated.

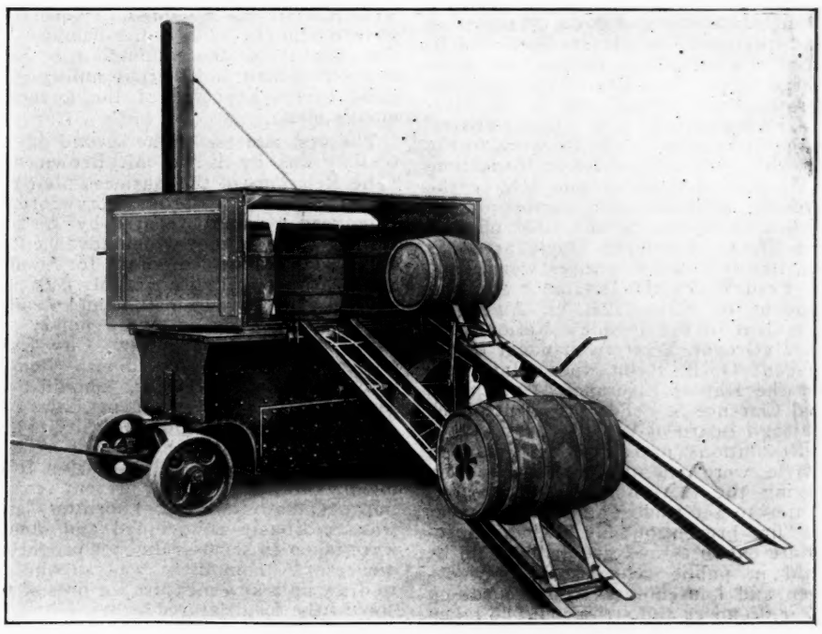
The regular engineering practice of constructing an all steel and iron machine was followed in the production of this new model.

New Asphalt Heating Kettle

The Iroquois Iron Works, Buffalo, N. Y., have placed on the market a new design of heating kettle for asphalt or tar. The peculiarity of the kettle, which so far as we know is entirely original, consists in the construction of a compartment on top of the kettle in which the barrels of tar or asphalt are placed to drain into the tank. This invention overcomes two difficulties: It enables the contractor to save the empty barrels, which can be sold for about 50 cents each, and it saves labor and waste of asphalt or tar in charging the kettle. Bitumens of certain viscosities at some temperatures are extremely difficult to handle, as they are too soft to permit stripping the barrel on the ground without waste and too hard to flow into the kettle when placed on a rack above it unless the barrel is so broken up as to nearly destroy its value. Under other temperature conditions either one or the other of these methods may be quite easy. However it is desirable to have an economical means of filling a tank without undue waste under all conditions, and it is this facility which the new design of Iroquois tank seems to supply.

The kettle is of 400 gallons capacity and the rack holds six barrels at one loading. Tank, hood, barrel rack, wheels and axles are all of tank or machinery steel. The hood doors are double on both sides. The sides of the steel setting are double, with an air space between them. The furnace, which has no grates, runs the whole length of the kettle. Although the over-all dimensions are 15 ft. 6 in. long by 7 ft. 3 in. wide the kettle can be turned completely around in a space of 20 ft. Clogging of the draw-off valve is avoided by placing the valve inside the tank. A metal skid with windlass is provided for elevating barrels of material to the rack above the heating tank. This arrangement makes it easy to handle barrels of heavy material quickly and without danger of injury to the kettle. The skids are, of course, detachable and are convenient for loading barrels on or unloading from wagons on the cars.

The proper use of this kettle might save $15 a day, as compared with conditions where barrels are a total loss and the waste of asphalt amounts to 10 pounds per barrel.



IROQUOIS TAR OR ASPHALT KETTLE WITH HEATING CHAMBER.

NEWS OF THE SOCIETIES

Fire Marshals' Association of North America.—The annual meeting began at the Hotel LaSalle, Chicago, Ill., June 14, with an attendance representing nearly all the States which have established fire marshal departments. It was reported that a half dozen States have created such departments or materially strengthened existing ones at the recent sessions of their Legislatures, and it was predicted that within a few years every State in the Union would have such a department.

C. J. Doyle, Fire Marshal of Illinois, in his opening address as president, recalled the growth of the movement, outlined its position and usefulness and urged the co-operation of all citizens in the work for the reduction of the fire waste of the country. F. M. Griswold, general inspector for the Home of New York, representing the National Fire Protection Association, urged the standardization of hydrants and hose fittings in order that the departments of neighboring cities might be able to interchange their equipments in case of conflagration or special need.

The formal paper of the morning was by W. B. Goodwin, Ohio State agent of the Ætna Fire and first president of the Ohio Fire Prevention Association. He traced the growth of the regulation of the fire hazard from early English days, showing the rapid progress made in the last few years, and attributed much of this to the influence of the State Fire Marshal Departments and the State fire prevention associations. He explained the enormous fire waste of the country by the absence of adequate buildings, the lack of a sense of individual responsibility and imposition upon legal leniency. Mr. Goodwin held that public work in the line of fire prevention must fall largely upon the State governments, and urged Civil Service for fire marshal deputies and work to reduce the physical as well as the moral hazard.

At the afternoon session a paper prepared by John W. Zuber, Fire Marshal of Ohio, on "The Bulletin Service of the State Marshal's Office" was read by D. B. Sharp, attorney for the department, Mr. Zuber being on the trail of a firebug in California. F. A. Craft, of South Dakota, spoke on "Inspection and Removal of Hazardous Conditions"; Charles A. Ellison, of West Virginia, on "The Best Policy in Matters of Prosecution," and W. H. Merrill, manager of the Underwriters' Laboratories, explained its work to the visitors and arranged for an inspection.

An informal dinner was held in the evening, attended by a number of fire insurance managers and field men of the State. President Doyle acted as toastmaster, and responses were made by Fred W. Potter, Insurance Superintendent of Illinois; L. S. Amonson, president of the People's National; P. D. McGregor, Western manager of the Queen; O. B. Ryon, special attorney for the Illinois Insurance Department, and Clarence S. Pellet, president of the Chicago Board of Underwriters.

Resolutions presented by President Doyle were adopted during the day urging the Governors of the various States to set aside one day each year as "fire prevention day," when appropriate exercises and fire drills could be held in public schools, the business men and householders could clean up their premises and steps could be taken to reduce the fire waste of the country.

Municipal League of Indiana.—The twenty-first annual convention was held at Crawfordsville June 20-22. President Lemuel Darrow, Laporte, called the meeting to order. City Attorney Mount, Crawfordsville, made the address of welcome, to which J. W. Fortune, Jeffersonville, responded. The roll call of cities revealed the fact that delegates were in attendance from thirty-nine cities of the State. The new State law requiring cities to pay the expense of delegates to the convention made the attendance unusually large. Mayor John O. Wilson, Marion, who was to discuss the subject of public band concerts, was not present, but a number of city officials told of what is being done in their respective cities along this line. It was the consensus of opinion that it pays for cities to appropriate money for public band concerts. John A. Wood, Superintendent of the City Schools of South Bend, spoke on "How Should Cities and Towns Develop Playgrounds and Parks?" He pointed out how cities of the first, second and third class have the right to levy a tax of from 5 to 9 cents on the $100 for playgrounds. In the discussion the question arose as to the city's rights to levy a tax for playgrounds and then spend the money on the development of school property. From statements made by different members, it was found that playgrounds in Indiana cities had been established in three ways—local taxation, popular subscription and the action of clubs and societies. The evening session was given to the question of women's suffrage. Mrs. Anetta D. Leech, Sullivan, spoke in the affirmative, and Mrs. Mary E. Ballard, Logansport, in the negative. Both speakers were impartially applauded. The paper by W. K. Martin, Crawfordsville, on "How Can the Smoke Nuisance Be Eliminated in the City?" was read by F. P. Mount. A. E. Veneman, Evansville, spoke on "Home Rule for Cities." In discussing the question, Timothy E. Howard, ex-judge of the Supreme Court of Indiana, and now President of the Common Council of South Bend, said in no State were the municipalities better governed than are they in Indiana. He said the Indiana form of government for cities is far better than is the commission form of government. The weakness in the commission form of government, he said, is the liability of the members of the commission to become inefficient and thereby nullify the good things expected of the government's plan.

The first address of the second day's session was by Edwin M. Brown on "The Relations of the Business Men to Their City." F. P. Mount, Crawfordsville, read a paper prepared by W. K. Martin, Indianapolis, which advanced a number of practical methods for eliminating the smoke nuisance. Mr. Martin advised every city to install smoke consuming equipment in every boiler of more than 100 horsepower. City Engineer William Moore, South Bend, read a paper on the topic, "Should the Present Street Improvement Law Be Amended, and Should the City Pay Any Portion of the Street and Alley Intersections?" In the discussion following the paper on the present street improvement law the Thornton law was vigorously condemned and steps were taken to secure relief for property owners. A committee was appointed to draw up a new measure for presentation to the Legislature.

The remainder of the afternoon was spent in an argument on municipal initiative, referendum and recall. Roy L. Shattuck, former Mayor of Brazil, opened with a forceful speech in favor of the measure. He was followed by G. T. Jones, of Whiting, who emphatically denounced referendum because of the distressing effect it would have upon the counties in the northwestern part of the State. A. D. Cunningham, City Attorney of Lafayette, concluded the afternoon's session with a carefully prepared paper. He entered a fervent protest against all phases of initiative, referendum and recall. In his paper he bitterly attacked the law which permits ignorant foreigners to vote, and the accompanying custom of corrupting the ballot.

On the third day of the convention "Pedestal Cluster Lights, Their Value and How to Get Them," was the subject of the address by Elza O. Rogers, Mayor of Lebanon. Professor R. L. Sackett, of Purdue University, spoke on the "Collection and Disposal of Garbage," and A. T. Maltby, Consulting Engineer of Chicago, spoke on "Water Supplies for Cities and Towns," Four addresses which could not be given at the morning's session were, on motion, held until next year, when they will be given.

In the query box discussion it was argued that a member of the Council cannot act as chairman of the Board of Public Works and expect to draw extra pay for his services. Mayor Foster, of Anderson, related the methods he employs in sending prisoners to the poor farm instead of laying out their fine in jail. Mayor Darrow, of Laporte, said his city sends its prisoners to the country and allows them to work for the farmers, the farmers paying the city for their services.

"No tears are shed," he said, "if now and then a prisoner runs away." City Attorney Mount, of Crawfordsville, said his city has her prisoners work out their fines on the city streets. How dustless hard streets can be obtained by oiling macadamized streets was brought out by Mr. Dugan, of Whiting. The streets there are oiled once each year at an expense of from 5½ to 6 cents per square yard. Kokomo also has oiled streets that are proving satisfactory, said Mayor Puckett, of that city.

With the selection of Hartford City for the convention of 1912, and the election of officers, the annual convention of the Indiana Municipal League came to an end. Lemuel Darrow, Mayor of Laporte, was re-elected president of the organization.

Besides President Darrow, Dr. E. C. Loher, of Noblesville, and Mayor James Burke, of Jeffersonville, were elected first and second vice-presidents, respectively. Fred Robinson, City Clerk of Crawfordsville, was unanimously elected treasurer, and James Trent, of Hartford City, was made secretary.

North Georgia-North Alabama Good Roads Association.—This association was formed at Rome, Ga., June 20, for the purpose of bringing about co-operation in the construction of good roads in Walker, Chattanooga, Barton, Cobb and Polk counties in Georgia and Stewart County, Alabama. Resolutions were adopted favoring the construction of a highway between Chattanooga and Atlanta via Rome. The following officers were elected: Albert M. Tumlin, Cave Spring, Ga., president, and J. D. McCartney, Rome, Ga., secretary.

Intermountain Good Roads Association.—The convention held at Pacatello, June 22-23, is said to have been the most important good roads gathering ever held in the Northwest. Delegates from the five states of Idaho, Utah, Montana, Wyoming and Nevada were present to the number of 200. E. R. Sherman, Buhl, Idaho, was unanimously re-elected president, and William Wallin, Pocatello, secretary; and Logan, Utah, was chosen as the next meeting place. The following papers were presented:

"Some Essentials in the Construction and Maintenance of Earth Roads," by Professor F. D. Farrell, of the University of Idaho.

"Recent Highway Legislation," by McCready Sykes of Boise.

"Interstate Roads," H. S. Ridgley, of Boise, Wyo.

"Features of Government Road Construction," by J. H. Dodge, superintendent of road construction for the department of agriculture.

"Government Aid for Public Highways in the West," by Darwin A. Utter, Surveyor General for Idaho.

"Intercapital Roads," by James H. Brady, former Governor of Idaho, and president of the Western Development Association.

"The Efficacy of Utah's Good Roads Laws," by William Spry, Governor of Utah.

"The Purchase and Application of Road Machinery," by Professor J. W. Jensen of the engineering department of the Utah State Agricultural College at Logan.

"Routes for Interstate Highways," by A. E. Robinson, State Engineer for Idaho.

"Good Roads from an Economic Standpoint," by Peter G. Johnston, of Blackfoot, "father" of the Rose Park road bill.

The following resolutions were passed: Recommending the passage of the Howell bill creating a national road commission to co-operate with the various state road commissions; recommending that the State legislatures of the intermountain states ask Congress to appropriate 1,000,000 acres of public lands to each of the states, the proceeds of which shall be used to construct interstate roads; recommending that highway commissions be created in each of the intermountain states.

New York Electrical Society.—The society at its annual meeting in the Enginering Societies Building, No. 29 W. Thirty-ninth street, elected the following officers: President, John Bottomley; vice-presidents, Elmer A. Sperry, J. C. Hatzel and Dr. Emil Heuel; secretary, George H. Guy; treasurer, Kingsley G. Martin. The society now has 822 members and is in excellent financial condition.

Health Officers of New York State.—Quite a number of health officers have already notified the department that they will be present at the next annual conference to be held in New York City in October. It is planned, as already announced, to devote the afternoon sessions to visits to institutions, etc. This will mean that transportation will have to be arranged for, and provision made for the conduct of the party over the institution. If the attendance is as large as it bids fair to be, it may be necessary to divide the health officers into groups, so that one group may visit one institution while another is making an inspection elsewhere.

Maine Society of Civil Engineers.—Although one of the youngest organizations in Maine along professional lines, the society, only six months old, has a large membership. It was decided to admit to membership civil, mechanical, mining, electrical and chemical enginers, surveyors, architects and other persons belonging to a technical profession.

Cyrus E. Babb, of Augusta, is president; Walter E. Sawyer, of Lewiston, vice-president; Frank E. Pressey, of Bangor, secretary; Harold S. Boardman, of Orono, treasurer; E. E. Jordan, of Portland, Philip E. Coombs, of Bangor, E. E. Greenwood, of Skowhegan, Moses Burpee, of Houlton, and Charles A. Mixer, of Rumford Falls, directors.

The composite membership of the society is expected to afford an opportunity to draw material for papers on a great many subjects of interest to all classes of engineers.

The papers which are read at the various meetings will be published in pamphlet form and eventually the society will have literature bearing on all the important engineering works in the State.

The society is accumulating a library of its own, having already received a valuable donation from a prominent engineer in Massachusetts. This library is deposited in the library of the University of Maine and is available to all members.

New York State Fire Chiefs' Association.—The eighth annual convention was held at Glens Falls June 21-22. The following officers were elected: President, D. J. Sullivan, Utica; vice-president, John Mack, Glens Falls; secretary and treasurer, Henry R. Yates, Schenectady; directors, Thomas O'Connor, of Schenectady, and A. P. Spitzer, of Scotia. The subject of automobile fire apparatus aroused the greatest interest. Elias J. Shadwick, of the Saratoga Springs Fire Department, gave the following six reasons for preferring motor apparatus:

First—The speed of horses in responding to alarms is from 12 to 15 miles an hour under the best conditions. The auto will cover 45 to 60 miles if necessary.

The time saved on reaching the scene of a fire means the saving of lives and property.

Second—It consumes nothing only while in actual service, thereby being a great saving to taxpayers.

Third—It can be stopped while going twice as fast as horses, in one-half the space, thereby avoiding accidents while answering an alarm.

Fourth—It can cover a long distance at the same speed as a short one, and repeat many times a day, which is impossible with horses. It is back in quarters from a fire much quicker than horses, ready to respond to another call.

Fifth—It will be a saving to every community in building as it requires only half the space of horse-drawn apparatus and all dust from the stable and odors are avoided.

Sixth—Another great advantage is that you have the services of the driver of an auto at the start as a fireman, which cannot be had with safety with horse-drawn apparatus.

A. M. Patten, chief electrical inspector New York Underwriters' Association, read a paper in which he stated at considerable length the causes of electrical fires. He said that fire losses from this cause could be regulated to a very large extent by providing well established standards for electrical contractors and engineers and by requiring a thorough and impartial inspection of all work by local engineers and underwriters.

Chief John Espey, Elmira, N. Y., presented a paper on the danger of steam and other metal pipes setting fire to floors. He said that iron pipes that are employed for the circulation of heat, whether hot water, hot air or steam, if they become rusty and come in close contact with timber, may through expansion and contraction, remove finely divided particles of metal which ignite through the action of the atmosphere.

Chief Albin Spitzia, Scotia, N. Y., Chief Richard Purcell, Richfield Springs, N. Y., and Chief J. Warren Teed, Schenevus, N. Y., discussed the question of the proper equipment for villages of the volunteer fire service. Chemical equipment, motor drawn, if possible, supplemented by an alarm system, was given the preference.

Chief Thomas O'Connor, General Electric Company, Schenectady, N. Y., discussing fire escapes, expressed a preference for the isolated enclosed fireproof stair tower.

South Carolina Good Roads Association.—President F. H. Hyatt and Secretary Fingal C. Black are engaged in preparing an interesting program for the annual convention to be held in Spartansburg, August 10-11. Several well-known authorities will address the convention on various phases of road building and a large attendance is expected. The membership includes the county supervisors and commissioners of the State, upon whom the responsibility for building and maintaining highways devolves.

Georgia State Firemen's Association.—The fifth annual convention and tournament was held at Rome, Ga., June 14-15. The meeting was called to order by President Thomas Ballantyne, Savannah. Mayor Hancock made the address of welcome, to which Chief F. G. Reynolds, Augusta, responded. Vice-President Sanders of the South Carolina Firemen's Association, addressed the convention and made the point that in States having favorable legislation departments in cities of 2000 population were as efficient as those in cities of 10,000 where no such protection was given.

The legislation referred to, in which the association is interested, will be introduced at the next session of the Georgia Legislature by Representative A. A. Lawrence, of Chatham. The bill, would subject the premium income of each fire insurance company doing business in Georgia to a tax of 1 per cent. The insurance commissioner shall pay over to the city treasurers of the different cities such an amount of the fund as has been paid in by the companies for business done in said cities. The money is to be turned over to a fireman's relief commission and is to be expended to safeguard the men in service from loss of time due to sickness or injury contracted while on duty, and to pension aged firemen or their dependent relatives in case of death.

There was an interesting discussion of auto apparatus, Chief Ballantyne speaking of the speed question. He declared that criticisms of high speed by the fire autos were unjustifiable and unfounded. He said the public got the idea of high speed from the necessary noise that was made.

Volunteer Firemen's Association of Texas.—The thirty-sixth annual convention met at Waco, Texas, June 20, in the Majestic Theatre. President W. T. Hunt, Dublin, called the meeting to order and City Commissioner J. M. Machey delivered the address of welcome and J. L. Story, Houston, responded. The following topics were discussed:

"What are the powers and duties of volunteer firemen to destroy property to prevent further spread of fires, and who is liable for the damage incurred?" was the first question taken up. Those who spoke on this subject held that firemen had the right to destroy property to check flames and that owners may recover from the city or the insurance company, but not from both. The second topic was, "What is considered the most convenient and effective chemical tank?" The inspection of chimneys and flues was next discussed, Greenville and Groesbeck delegates taking the lead. The question of providing for needy firemen after they have been disabled in active service was discussed by Plainview delegates, who did not believe that the care of such firemen should rest with the association. The Mexia delegates were assigned the topic dealing with the advisability of taking fire apparatus, decorated, out to celebrations and parades. It was held that no decorations which would hamper effective work should be permitted in such cases. The next topic dealt with the clearing of streets of street cars and other traffic in case of fire and the Corsicana and Sweetwater delegates believed that this should be done as far as possible. Austin and Taylor delegates discussed methods of giving fire alarms. The size of the town, it was recommended, should determine whether telephones were advisable or not. Chief Magee, of Dallas, read a paper on automobile fire apparatus, saying it was quicker, more efficient and more economical. Chief Bidicker of Fort Worth spoke along the same line.

The officers elected are as follows: President, John McKinney, McKinney; first vice-president, H. W. Spreckles, La Grange; second vice-president, F. B. Warren, Belton; third vice-president, Peter Schramm, Taylor; fourth vice-president, W. L. Foreman, Denton; recording secretary, J. Ed Schmitz, Dallas (re-elected); treasurer, J. L. Storey, Houston (re-elected).

Twentieth Century Club, Boston, Mass.—Professor James S. Pray, of Harvard, who spoke at the Boston-1915 city planning conference at the Twentieth Century Club, said that with all the difficulties of the irregular streets of Boston, they possess advantages which are too rarely mentioned.

He also stated that they tend to provide a maximum of sunlight and air and a minimum of wind and dust. There is a strong movement in Germany for irregular streets, as the Germans believe they are best for a modern city hygienically, socially, economically and esthetically. He commended that idea and said that a city is better adapted to the needs of the people if it is irregular as a whole, with its smaller units regular.

Professor Pray believes the city need not regret its winding streets, because a really functional plan may be evolved adapted to business and to healthy housing at a smaller cost than possible in New York, with its more formal system.

Calendar of Meetings

July 3-8.
South Dakota State Firemen's Association.—Tournament and Convention, Lead, S. D.—Charles P. Coolidge, Lead, S. D.

July 21-23.
Wisconsin State Firemen's Association.—Annual Convention, Fort Atkinson, Wis.

July 25-26.
Western New York Firemen's Association.—Convention, Springville, N. Y.

July 25-28.
Iowa Firemen's State Association.—Tournament, Des Moines, Ia.—N. J. Francis, Secretary, Des Moines.

July 25-27.
Wisconsin Paid Firemen's Association.—Annual Convention, Superior, Wis.—Chief Johnson, Superior, Wis.

July 25-27.
Central New York Volunteer Firemen's Association.—Annual Convention, Waverly.—Thomas Knobel, Homer, N. Y.

July 26-28.
Upper Peninsula Firemen's Association. Tournament, Bessemer, Mich.

July 25-28.
American Acetylene Association.—Annual Convention, Atlantic City, N. J.

August 1-3.
Ohio Chiefs' Association.—Convention, Cedar Point, O.—Chief, A. Hegeman, Cedar Point.

August 1-3.
Ohio Fire Chiefs' Association.—Annual Convention, Cedar Point.—Chief Loller, Chairman Executive Committee, Youngstown, O.

August 10-11.
South Carolina Good Roads Association.—Annual Convention, Spartansburg. Fingal C. Black, Secretary, Columbia, S. C.

August 15-17.
Utah State Firemen's Association.—Convention, Provo, Utah.—C. F. Stillman, Bingham, Utah.

August 15-18.
Firemen's Association of the State of New York.—Rochester, N. Y.—Thos. Honohan, Secretary, Frankfort, N. Y.

August 23-25.
Virginia State Firemen's Association.—Convention and Tournament, Newport News.

September 4-6.
Montana State Firemen's Association.—Annual Convention, Billings.—E. M. Nelson, vice-president, Billings, Mont.

September 11-14.
Pacific Coast Association of Fire Chiefs.—Nineteenth Annual Convention, Vancouver, B. C.

September 12-15.
American Association for Highway Improvement.—First Annual Convention, Richmond, Va.—Logan Waller Page, President, United States Office of Public Roads, Washington, D. C.

September 12-15.
International Association of Municipal Electricians.—Annual Convention, St. Paul, Minn.—Clarence R. George, Secretary, Houston, Tex.

September 18-30.
International Municipal Congress and Exposition. — Chicago, Ill. — Curb M. Treab, Secretary, Great Northern Building, Chicago, Ill.

September 18-October 1.
Fourth International Good Roads Congress.—Chicago, Ill.—J. A. Rountree, Secretary, Birmingham, Ala.

September 19-22.
International Association of Fire Engineers.—Annual Convention, The Auditorium, Milwaukee, Wis.—James McFall, Secretary, Roanoke, Va.

September 19-22.
American Hospital Association.—New York City. J. N. E. Brown, M.D., Secretary, Toronto General Hospital, Can.

September 24-30.
International Congress on Tuberculosis.—Rome, Italy.—Professor Ascoli, Secretary-General, Via Lucina, Rome, Italy.

September 26-29.
American Society of Municipal Improvements.—Grand Rapids, Mich.—A. Prescott Folwell, Secretary, 239 West Thirty-ninth street, New York City.

October 4-6.
League of American Municipalities—Annual Convention, Atlanta, Ga.—John MacVicar, Secretary, Des Moines, Ia.

October 18-20.
Massachusetts State Firemen's Association.—Annual Convention, Lawrence, Mass.—Dr. Arthur Burt, Secretary, Taunton, Mass.

November 13-17.
National Municipal League.—Annual Meeting, Richmond, Va.—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

PERSONALS

ALLEN, CHARLES S., Chief of the Fire Department of Trenton, N. J., is recovering from a severe illness.

BALL, FRED, a prominent business man of Maricopa and Chief of the Fire Department, was instantly killed by a live wire while fighting a fire that destroyed half of the business section of Maricopa. Many fire fighters were injured by falling timbers.

BLOCKER, DR. LOUIS DE M., of Pensacola, Fla., again heads the Board of Public Works, having been unanimously re-elected as chairman of that board at the first meeting of the new board.

CAMPBELL, DAVID, Chief of the Portland, Ore., Fire Department, and five firemen were killed in a fire which destroyed a warehouse belonging to the Union Oil Company one day last week. The six men had gone into the building to investigate the blaze when there was a terrific explosion which wrecked the structure and the entire roof fell in.

COLLIER, A. W., has resigned as Chief Engineer of the Hemphill Water Works Station of Atlanta, Ga.

EVANS, DR. WILLIAM A., former Health Commissioner of Chicago and one of the world's greatest sanitation experts, spoke on "Sanitation of a City" one day last week before the Woman's City Club, of Los Angeles, Cal. He paid high tribute to the city as regards its sanitary conditions.

FORD, FREDERICK L., former City Engineer of Hartford, Conn., recently delivered his illustrated lecture on Civic Art in that city.

GALLOWAY, J. D., Consulting Engineer of Berkeley, Cal., has resigned from the committee appointed to investigate a water supply for the Bay cities. Mr. Galloway was appointed with J. H. Dockweiler, the former being requested to investigate the Sierra system and the latter the local system.

HAZEN, ALLEN, of New York, has been retained by the city authorities of San Francisco to advise with them regarding the Hetch-Hetchy water supply project and other municipal works.

MCKERNAN, JOSEPH, has withdrawn from the firm of Oldershaw & McKernan, Civil Engineers, of New Britain, Conn., and will have charge of the work for the New Britain Water Department at Burlington.

MARTIN, E. S., has resigned as Superintendent of the Municipal Recreation Department of Columbus, O., to become the head of the Playground Association in Washington, D. C. He will resume his work there about the first of August, leaving Columbus about the 26th of July.

MURPHY, THOMAS R., Chief of the Fire Department of San Francisco, Cal., has been presented by the Downtown Association with a beautiful testimonial of the regard and appreciation of that organization for the services he has rendered the city as head of the Fire Department. The testimonial was a writing-desk set of gold, handsomely engraved.

ROURKE, LOUIS K., Commissioner of Public Works of Boston, is contemplating a trip to Europe for the purpose of studying the lighting systems of the principal cities, as well as for rest and recreation.

SEAMAN, HARRY B., formerly Chief Engineer of the New York State Public Service Commission, First District, and lately engaged in consulting practice at 165 Broadway, New York, is now in Europe as a delegate of the Boston Chamber of Commerce, investigating city planning and docks.

INDUSTRIAL NEWS

Cast Iron Pipe.—Chicago: There has been a satisfactory run of miscellaneous business and a number of large orders were closd. Quotations: 4-inch, $25.50; 6 to 12-inch, $24.50; 16-inch and up, $24. Birmingham: There has been no change in authorized quotations, but in view of the decline in pig iron prices it is quite probable that large contracts will result in shading of prices. The Dimmick Pipe Company's local plant has been taken over by the United States Cast Iron Pipe and Foundry Company. Quotations: 4 to 6-inch, $22; 8 to 12-inch, $21; over 12-inch, average, $20. New York: Some interesting export inquiries have been received. Quotations: 6-inch, carloads, $21 to $22.

Lead.—Market is firm, but dull. New York, 4.50c; St. Louis, 4.35c.

Roads That Pay.—Under this caption the American Asphaltum and Rubber Company, 600 Harvester Building, Chicago, have issued an attractive illustrated booklet explaining the advantages of bituminous roads and the merits of the Pioneer road asphalts, which contain Gilsonite, one of the highest grade natural products, as their basis. The New York State Highway Commissioners are quoted to the effect that bituminous building material in the top courses of macadam roads is absolutely essential and that the increased cost is more than offset by the decrease in the annual cost of maintenance and repair. Specifications for asphalt macadam roadways made by the penetration or pouring method are added. Besides photographs of bituminous roads made with Pioneer asphalt are illustrations of two devices useful in construction. These are a kettle of 500 gallons capacity and a machine for cutting asphalt which consists of a windlass with suitable framework and a steel wire.

Concrete Bridge Patents.—By agreement of the parties to the suit, a judgment for $1,654 was given Daniel B. Luten, Indianapolis, Ind., president of the National Bridge Company, in a case in the Federal Court he had filed against Alexander & Gerber, of Hammond, for infringing Luten's patents, when the Hammond firm erected a bridge at Lowell. An injunction also was entered against the Hammond firm to prevent further infringement. The patents cover certain inventions on arch structures in use in reinforced concrete bridges. In the entry agreed on, it is stated that Luten is the first true and original inventor of the method of construction, and that he is now the lawful owner of the patents. Several other suits by Luten against different bridge companies for infringing his patents are pending in the federal court. The amount of the judgment agreed on is a 10 per cent royalty on the contract price for the construction of the bridge at Lowell.

Auto Pumping Engine.—A report of Chief Hunter, Springfield, O., of the 19 months' record for Webb motor pumping engine, is as follows: The machine made 309 runs and pumped a total of 12 hours at fires. The total expense for gasoline, oil, etc., was $112.56, while the total tire cost was $252.75. The cost of maintaining horses, the repairs to apparatus and for fuel for the corresponding nineteen months for one of the steam fire engines was $1,300.

Oil Distributor.—The Good Roads Machinery Company, Marathon, N. Y., have issued a pamphlet under the caption, "The Right Way for a Highway," describing their Perfection Hauling Tank and Distributor for applying tar, tarvia, light oils and binders. The illustrations show side and end views of the machine and the distributor itself on a large scale. The description is clear and detailed, an excellent feature in a pamphlet of this character. The Perfection machine consists of a 600-gallon cylindrical steel tank with heater and distributor attachments, mounted on a platform spring gear truck, with steel wheels and roller bearing axles. One distributor may be used in connection with two or more hauling tanks. The distributor covers a width of roadway of two, four or six feet. The delivery of material is in a sheet through an adjustable slot, which is adjustable so as to spread from a quarter of a gallon to two gallons per square yard. The heater will maintain an even temperature of 250 degrees Fahrenheit. The machine is recommended for handling binder containing up to 60 per cent of asphalt; for heavier grades another machine, the Perfection Distributor, is made.

Machinery for Handling Earth and Stone.—The Western Wheeled Scraper Company, Aurora, Ill., issue a catalogue describing and illustrating their machinery for handling earth and stone which is divided into four parts, namely: Scrapers and plows; cars; elevating graders and wagons, and road machinery. The company were the pioneers in the manufacture of wheeled scrapers and they make many different styles. The Western air dump cars dump their load clear, so that the train can be pulled out immediately without any shoveling by hand. Elevating graders are made in three sizes, the smallest, the junior, being adapted for loading wagons and turnpiking. The road graders are made in two sizes. The Aurora portable rock crusher is a convenient outfit and carries an elevator which folds up in transportation.

Centrifugal Pumps.—The Erie Pump and Engine Works, Erie, Pa., publish a little book, No. 26, which illustrates a few of the many combinations of the various styles and types of pumps made by them. The book is not intended as a catalogue with detailed descriptions, but simply as a guide by which one may select a type of pump and then seek further for detailed information.

Reinforced Cement Pipe.—The Reinforced Concrete Pipe Co., Jackson, Mich., is sending a souvenir paperweight to its friends. The weight is a reproduction of a boulder located on a street in Jackson, which with a bronze inscription marks the spot where the Republican party was first organized.

General Electric Bulletins.—The General Electric Company, Schenectady, N. Y., has recently issued the following bulletins: No. 4834, The Electrical Equipment of the Detroit River Tunnel: No. 4835, Electrically Driven Pumps (this includes illustrations of sewage and fire installations); No. 4836, The G. E. Steam Flow Meter; No. 4854, Curtis Steam Turbine Generators: No. 4847, Belt Driven Alternators, Form B; No. 4848, Automobile Instrument, Type DK33; No. 4850, G. E. Edison Mazda Lamps for Standard Lighting Service; No. 4851, Electricity in the Service of Steam Railroads.

Chain Grate Stokers.—Concerns that have put in smoke preventing or consuming devices are sending letters to Jacob P. Brown, city smoke inspector, Indianapolis, Ind., notifying him of the results obtained. Among the letters is one from Kingan & Co., which the inspector says was formerly one of the worst violators of the anti-smoke ordinance in the city. The letter from the company follows:

"We beg to advise you that since the installation of chain grate stokers in our No. 2 boiler room we find the operation entirely satisfactory. Both of our plants, one of 2400-hp. and the other of 1800-hp., are now stoked with chain grate stokers and we show a material saving in the cost of operation, that is, the saving in labor due to mechanical operation.

"We do not show any material saving in fuel consumption, but it has, nevertheless, enabled us to comply fully with the smoke ordinance with good returns on our investment. We appreciate very much your courteous treatment and we believe that the way you are handling the smoke problem is a credit both to yourself and the city."

Sewer Machine.—The Stewart Sewer Machine Company, St. Louis, Mo., are looking for a portion of one of their machines which was shipped from St. Louis to Binghamton, N. Y., some weeks ago. A portion of the apparatus was received, but the remainder never arrived. It was an extra heavy machine built specially for Binghamton.

Asphalt Demonstration.—A demonstration of a Lutz asphalt resurfacing heater was made in McCrea street, Indianapolis, Ind., last week by the Union Asphalt Construction Company, the city furnishing the asphalt. The demonstration was made in the presence of the board of public works and the board of public works of Terre Haute. The machine heats the old asphalt surface and the new asphalt is applied at the same time.

First County Road Automobile.—St. John County, Fla., probably holds the record of having the first county government to own and operate an automobile truck for road construction. A two-ton truck was recently delivered to the county commissioners by the St. Augustine Machine Company. The truck will be used for hauling shells, of which many of the roads are made.

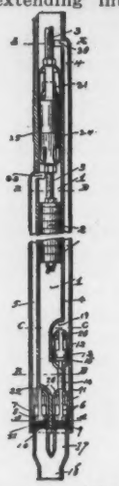
Invisible Ink for Contractors.—At a recent letting in Osage City, Kan., bids were received for brick paving, the bidders being the McGuire & Stanton Paving Company, a local firm and a Wichita concern. The Wichita concern bid a low price for "brick, Buffalo No. 1," and were anxious to have the contract signed at once, as they wished to return home. However, the Mayor delayed and put the contract in his desk. The next day in looking over the paper he found a line drawn through "Buffalo No. 1." The only conclusion the city officials can arrive at was that the line was drawn in invisible ink and turned black over night.

Concrete Machinery.—The Ideal Concrete Machinery Company, South Bend, Ind., which has increased its capital stock from $250,000 to $500,000, will enlarge its plant, increasing its capacity about one-third. The company already has one of the largest plants in the world. Its officers are: President, Mentor Wetzstein; vice-president and general manager, George B. Pulfer; secretary, George B. Hopkins.

PATENT CLAIMS

996,490. Deep Well Pump. Samuel Lippert, East Cleveland, Ohio, assignor, by mesne assignments, to The American Pump Company, Phoenix, Ariz., a Corporation of Arizona. Serial No. 371,952.

In a working barrel for a drilled well pump, a cylindrical piston chamber and piston and rod therein, a tapered portion of said piston chamber located above the piston travel, a lead coated valve casing seated thereon, and self-closing valve therein, passages of flat lunar section on each side of the piston chamber communicating therewith, one passage above and one passage below said tapered portion of said piston chamber, a valve chamber for each passage extending into said piston



chamber below said piston travel, one chamber being below the other, the lower valve chamber being flush with the lower extremity of the barrel, and the upper valve chamber opening into the piston chamber, a second valve chamber adjacent to the said lower valve chamber and located vertically below the upper valve chamber, and opening into said piston chamber, and a connection for the inlet openings to said lower valve chamber and second valve chamber, and valve casings in said chambers and self-closing valves in said casings, the said valve casings in the said upper and second valve chambers being connected together.

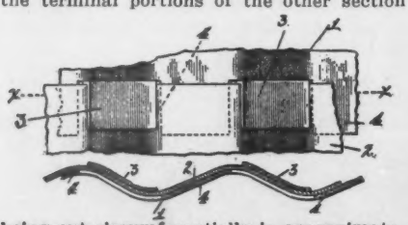
996,513. Road and Process of Making It. Edward Alfred Paterson, Port Arthur, Ontario, Canada. Serial No. 567,959. Divided. Serial No. 603,689.

The herein described method of forming a road, which consists in preparing the road bed, mixing in suitable proportions sucrate

of lime and an alkaline silicate and laying said mixture with suitable road metal on the road bed, thus producing calcium silicate on the exposed surface of the road, while the sucrate of lime and the alkaline silicate below the surface remain substantially unchanged.

996,166. Metallic Culvert. Karl Johan Thorsby, Oakland, Cal., assignor to California Corrugated Culvert Company, Oakland, Cal., a Corporation. Serial No. 612,481.

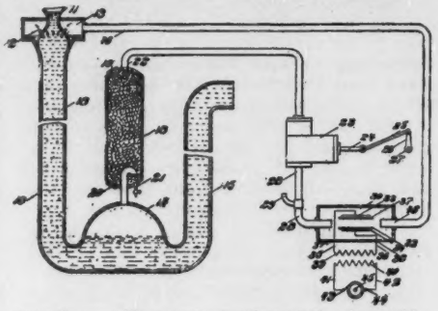
A metallic culvert comprising circumferentially corrugated sections, the terminal surfaces of one of said sections being a flat plane in the direction of their length, and the terminal portions of the other section



being cut circumferentially in approximately the apexes of the ridges and the bottoms of the valleys of the corrugations, to form separated lugs, said lugs being offset, the portions of said sections between the lugs being left as straight tongues.

996,560. Apparatus for Purifying Water by Ozone. Charles S. Bradley, New York, N. Y., assignor to Richard B. Wilson, New York, N. Y. Serial No. 265,920.

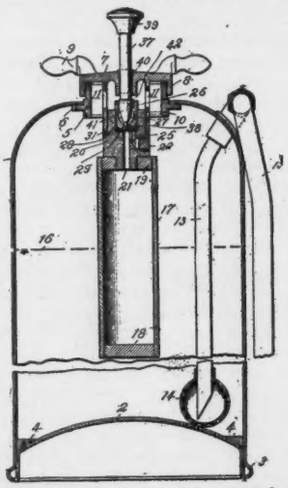
The combination with means for supplying water and means for producing ozone, of means for introducing said ozone into said water, means for materially com-



pressing said ozone isothermally in said water by the water, means for separating the resultant gas under pressure from said water, means for expanding said compressed resultant gas adiabatically and means for returning the expanded resultant gas to said ozone producing means.

995,978. FIRE-EXTINGUISHING APPARATUS. Harry M. McCaslin, Elmira, N. Y., assignor to America-La France Fire Engine Company, Elmira, N. Y., a Corporation of New York. Serial No. 417,150.

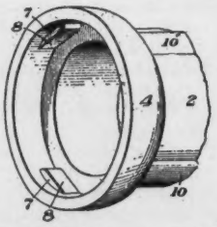
An apparatus of the character described, the combination with a container for liquid extinguisher, of a container for fluid gase-



ous at atmospheric temperatures and pressures having a gas passage, a sealing diaphragm for said passage, a chambered body above the diaphragm, and a puncturing member slidingly supported in said chambered body so as to be operated upon by the escaping gas.

996,023. SEWER-PIPE. Samuel McAdoo, Toronto, Ohio, assignor to National Fire Proofing Company, Pittsburg, Pa., a Corporation of New Jersey. Serial No. 497,001.

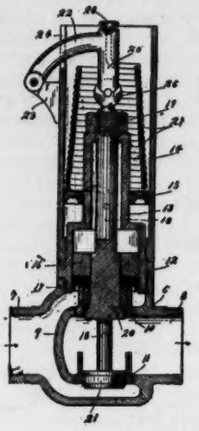
A pipe section, formed of plastic material, having a bell at one end whose wall is of substantially uniform thickness and is provided on its inner surface with spaced wedge-shaped projections. the inner faces of said projections extending in a circumferential direction from the inner face of the bell toward the center of the bell, and



receding abruptly from the high point of said projection to the inner face of the bell, said projections being adapted to be engaged with the peripheral faces of corresponding projections on the end of another pipe section by relative rotary movement in one direction only, the pipe section also having a series of longitudinally extending ribs on the exterior surface; substantially as described.

996,125. Relief-Valve for Fire Engines. Theodore J. Pagel, Minneapolis, Minn. Serial No. 578,102.

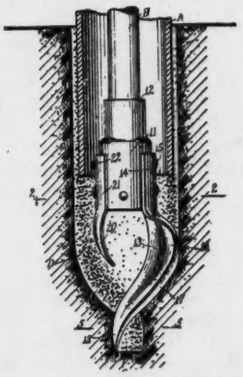
The combination with a pump, of a relief valve normally closing a water escape passage from the outlet of said pump, a differentially acting lever pivoted at one



side of the axis of said valve and having an elongated head that is normally axially aligned with said valve and operates thereon at its inner end, and a spring anchored to a relatively fixed part and to the outer portion of the head of said lever, substantially as described.

996,450. Earth Boring Auger Cutter Head. Peter Antoine Bouchet, Merced, Cal. Serial No. 588,093.

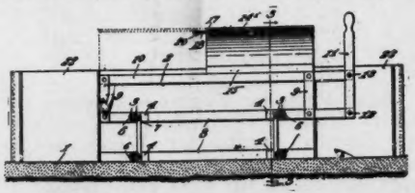
An earth boring auger cutter head, comprising a tubular rotary boring rod; a cutting blade connected with said rod, shaped in its longitudinal extension to a reverse curve, the end section of said blade being extended to the side of the axial center of said rod opposite that to which is extended



the body portion of said blade, said body portion and said end section being sharpened on opposite sides of the longitudinal center of said blade; and a deflector member, the sides whereof are outwardly inclined, mounted in the lower end of said boring rod to divide the water descending therein to deliver the same against the inner surface of said blade.

995,529. CULVERT-MOLD. Arthur J. Fox, Almont, Mich. Serial No. 583,828.

A device of the class described comprising side walls; reinforcing bars secured to the side walls longitudinally thereof; cooperating spacing members carried by the bars; supporting bars disposed above the reinforcing bars; links connecting reinforcing bars and the supporting bars; arch members resting directly upon the support-



ing bars; the ends of the supporting bars and of certain of the reinforcing bars being terminally extended beyond the side walls; levers fulcrumed upon the protruding portions of said reinforcing bars, the levers being pivotally connected with the supporting bars; wings pivoted to the side walls; the protruding ends of said bars constituting stops to receive the wings, to aline the wings with the side walls.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Ohio	Cincinnati	July 7, noon	Oiling Harrison pike in Harrison and Whitewater townships; also repairing Indian Hill avenue in Columbia township	Stanley Struble, Pres. Bd. Co. Comrs.
Ohio	Mt. Gilead	July 7, 11 a.m.	Improving 7½ miles of country road	Clifton Sipe, County Auditor.
North Carolina	Tarboro	July 7, 4 p.m.	Constr. about 25,000 sq. yds. of 8-in. bituminous macadam paving; alternate bids on 8,000 sq. yds. vit. brick and 11,000 sq. yds. bituminous macadam; constr. sidewalks, drain., etc.	W. O. Howard, Mayor.
Illinois	Chicago	July 7, 11 a.m.	Furn. about 5,000 cu. yds. of crushed granite	L. E. McGann, Comr. Pub. Wks.
Florida	Jacksonville	July 7, 10 a.m.	Grading the marsh causeway on the Duval road; oiling Atlantic Boulevard from City Limits to Cement road	Gail L. Barnard, County Engineer.
Dist. of Col.	Washington	July 7, 2 p.m.	Laying cement sidewalks	Cuno H. Rudolph, Comr.
Indiana	Fowler	July 7, 1 p.m.	Constr. two freestone roads in Hickory Grove Township	Lemuel Shipman, County Auditor.
Indiana	Jonesboro	July 7	Grading a road, heavy work	Town Board.
Michigan	Lansing	July 8	Improving one mi. of road in St. Clair County, including building earth embankment 2,000 ft. long, retaining wall, culverts, railing, etc	Townsend A. Ely, State Hwy. Comr.
New York	New York	July 10	Repairing asphalt pavement on marginal street, North River	Calvin Tomkins, Comr. Docks.
Indiana	Williamsport	July 10, 2 p.m.	Constructing a gravel road in Adams township	D. H. Moffitt, County Auditor.
North Carolina	High Point	July 10, 1:30 p.m.	Grading, curbing and macadamizing various streets, estimated cost $40,000	Fred N. Tate, Mayor.
Indiana	Rockville	July 10	Constr. the Shonkwiller Road in Jackson and Union townships, Parke County and in Clinton and Madison townships, Putnam County	County Commissioners.
Alabama	Andalusia	July 10, noon	Grading and surfacing with sand clay 9 miles of road	D. K. Caldwell, County Engineer.
Ohio	Wadsworth	July 10, noon	Grading, curbing and paving with vit. brick about 9,500 sq. yds	Louis F. Allen, Village Clerk.
New Jersey	Jersey City	July 10, 2 p.m.	Constr. about 1,015 sq. yds. wooden block pavement; curbing, guttering, etc	Geo. T. Bouton, Clk. B. S. W. Cm.
Georgia	Americus	July 10, 7 p.m.	Paving about 50,000 sq. yds. and building about 12 miles of pipe sewers and appurtenance. J. B. Ansley, City Engr.	T. H. Hawks, City Clerk.
Pennsylvania	Erie	July 10	Paving two streets	Thomas Hanlon, City Clerk.
Oklahoma	Muskogee	July 11, 10 a.m.	Grad., curb., gutter., draining and paving various streets	Chas. Wheeler, City Clerk.
Iowa	Greenfield	July 11, 2:30 p.m.	Constr. about 14,000 sq. yds. brick or cement paving; 4,500 lin. ft. curb; Iowa Engrs. Company, Chase Block, Clinton, Iowa, Engineers	Town Clerk.
Illinois	Chicago	July 11, 11 a.m.	Furn. pine lumber to Bureau of Streets during term ending Dec. 31, 1911	L. E. McGann, Comr. Pub. Wks.
Pennsylvania	Washington	July 12, 11 a.m.	Constr. various county roads with necessary culverts and small bridges, about 23 miles in all	John H. Moffitt, County Compt.
Pennsylvania	Washington	July 12, noon	Furn. vit. brick to be used in constructing 162,000 sq. yds. pav.	John H. Moffitt, County Compt.
Ohio	Columbus	July 12	Resurfacing about 24,000 ft. of county road in Marion twp	Bd. Co Comrs.
Ohio	Cleveland	July 13, noon	Grading, draining, curb., paving with brick and otherwise improving various streets	A. B. Lea, Dir. Pub. Service.
Ohio	Youngtown	July 14, noon	Grading, draining, culverting, macadamizing and otherwise improving several roads in Liberty township	John H. Howells, Twp. Clerk.
North Carolina	Wilmington	July 15, noon	Constr. 24,000 sq. yds. paving, curbing and guttering	F. F. Pillett, City Engineer.
Michigan	Luther	July 15, 4 p.m.	Constr. 11½ miles gravel road in Newkirk and Ellsworth twps.	Norman Buckner, Twp. Clerk.
Ohio	Greenville	July 15	Constructing the Althoff road in Patterson township	Bd. County Comrs.
Texas	Bonham	July 15	Constr. about 4,538 ft. concrete curb; 22,645 sq. yds. paving; 4,000 sq. yds. grading; 670 ft. storm sewers	T. W. Ragsdale, Mayor.
Tennessee	Johnson City	July 20, 6 p.m.	Constr. 23,000 sq. yds. paving, including bridges, sewers, storm water drain, concrete curb and gutter, consisting of about 5,000 cu. yds. excavation; 23,000 sq. yds. paving; 12,000 lin. ft. curb and gutter	W. M. Dunlap, City Comr.
Indiana	Decatur	July 21, 10 a.m.	Constr. macadamized roads in Allen, Root and Adams twps	H. S. Michaud, County Auditor.
Florida	Jacksonville	July 21	Constructing about a mile of county road	County Engineer.
Wisconsin	Racine	July 22	Paving Owen Avenue	Bd. Pub. Wks.
Minnesota	Minneapolis	July 24	Constructing Superior Boulvard	C. M. E. Carson, County Comr.
SEWERAGE				
Kentucky	Winchester	July 7, 7:30 p.m.	Constr. sewage clarification tank and sludge drying beds	S. H. Rutledge, City Engineer.
Kentucky	Louisville	July 7, noon	Constr. 5,245 ft. of vit. pipe sewer from 10-in. to 22-in.	James H. Preson, Pres. Bd. Awards.
New York	Buffalo	July 7, 11 a.m.	Constr. 10 and 12-in. tile sewers, in two streets	Francis G. Ward, Comr.
Georgia	Americus	July 10, 7 p.m.	Building pipe sewers and appurtenances, about 12 miles; also paving about 50,000 sq. yds. J. B. Ansley is City Engineer	T. H. Hawks, City Clerk.
North Carolina	High Point	July 10, 1:30 p.m.	Constr. sewer and water lines amounting to about $50,000	Fred N. Tate, Mayor.
Ohio	West Lafayette	July 10	Constructing storm water sewers. Est. cost $16,000	E. L. Thompson, Village Clerk.
Georgia	Macon	July 10, noon	Digging trenches and laying 5,003 ft. 12-in. pipe; 3,140 ft. 8-in.; 5,363 ft. 6-in., hydrants, valves, special castings etc	John T. Moore, Mayor.
Massachusetts	Fitchburg	July 11, 3 p.m.	Constr. 2,928 lin. ft. earth excavation and re-filling in trench for 45-in. sewer; brick masonry, concrete masonry; 40,000 lbs. steel bars cor reinforcing concrete	David A. Hartwell, Engineer.
New York	Newburgh	July 11, 5 p.m.	Constr. about 1,450 lin. ft. 15-in. pipe sewer and appurtenances.	Wm. J. Blake, Jr., City Engr.
Dist. of Col.	Washington	July 12	Constructing sewers in various streets	Cuno H. Rudolph, Comr.
Ohio	Dayton	July 12, noon	Constr. sanitary sewers connections, about 100	J. C. Ely, Dir. Pub. Service.
Iowa	Valley Junction	July 13, 7 p.m.	Constr. 5½ miles 8 to 20-in. sewers and a sewage disposal plant	Iowa Engr. Co., Clinton, Ia., Engrs.
Wisconsin	Rhinelander	July 17, 2 p.m.	Constr. about 10,183 sq. yds. macadam pavement, combined cement curb and gutter	Geo. C. Jewell, Chm. Bd. Pub. Wks.
Pennsylvania	Ligonier	Aug. 1	Building sewage disposal plant, including sedimentation tank, sprinkling filter, sludge bed and pumping station. F. H. Shaw, Lancaster, Engineer	L. F. Brandt, Boro. Clerk.
Tennessee	Nashville	Aug 10, 3 p.m.	Constr. about 7 miles of circular brick trunk sewers, ranging in size from 30 to 111-in. in diameter	Wm. W. Southgate, City Engr.
WATER SUPPLY				
Nebraska	Columbus	July 7, 8 p.m.	Constructing and installing a water works extension	City Clerk.
Missouri	St. Louis	June 7, noon	Furn. 2 steam turbine-driven centrifugal pumping units complete with condensing apparatus and appurtenances	Bd. Pub. Improvements.
Massachusetts	Boston	July 7, 2:30 p.m.	Laying 6,700 ft. of 20-in. c. i. water pipe in Hyde Park, Mass.	Dexter Brackett, Chief Engr. W.W.
New York	Niagara Falls	July 7	Installing water mains, in all streets, paralleling the mains of private company	Thomas H. Hogan, City Clerk.
Missouri	Milan	July 8	Installing a water works system. Hiram Phillips, St. Louis, Mo., is consulting engineer. Est. cost $25,000	City Clerk.
Indiana	Clinton	July 8, 9 a.m.	Constructing additions and alterations to water works plant	Clinton Water Works Co.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
			WATER SUPPLY (Continued)	
Massachusetts...	Pittsfield.....	July 10.....	Laying about 10,400 ft. of 24-in. c.i. water pipe.....	Wm. H. Swift, Chm. Bd. Pub. Wks.
New Jersey....	Camden.....	July 10, 11 a.m.....	Constr. pump house. Furn. gasoline engine, foundation, gasoline tank pump, connections and standpipe in position; generator with foundation and electrical equipment.....	J. J. Albertson, County Engineer.
South Dakota..	Sioux Falls.....	July 11, 9 a.m.....	Constr. a reinforced concrete well 50 ft. in diam. 35 ft. deep and motor house for municipal water works system.....	Lewis Larson, City Auditor.
Ohio.....	Dayton.....	July 12, noon.....	Constructing about 90 water connections,.....	J. C. Ely, Dir. Pub. Service.
Missouri.....	Kansas City.....	July 12, 2 p.m.....	Designing, manufacturing and installing a battery of water tube boilers.....	E. B. Harrington, Sec. B. F. & W. C.
Minnesota.....	Taconite.....	July 12, 8 p.m.....	Constr. water works system, comprising about 2,584 lin. ft. 8-in. c. i. pipe; 4,559 lin. ft. 6-in.; 1,694 lin. ft. 4-in.; gate valves, manholes, hydrants, etc.....	John E. Dennis, Village Clerk.
Ontario, Can...	St. Catherine....	July 13, noon.....	Laying 5,000 ft. 24 and 30-in. c. i. pipe; 15,000 ft. 24-in. pipe; constructing auxiliary reservoir.....	Alex Milne, Supt. W. W.
Quebec, Can....	Montreal.....	July 13, noon.....	Constr. final filters and appur. forming por. of filtration plant..	L. N. Senecal, Secy. Bd. Comrs.
Georgia.....	Macon.....	July 16, noon.....	Digging trenches and laying 5,003 ft. 12-in., 3,140 ft. 8-in., 5,363 ft. 6-in. pipe with hydrants, valves and spec. castings..	John T. Moore, Mayor.
Georgia.....	Americus.....	July 17.....	Constr. a reinf. conc. reservoir 60 ft. in diam., 13 ft. deep.....	T. N. Hawks, City Clerk.
Ohio.....	Columbus.....	July 17, noon.....	Laying cast iron force mains and appurtenances, consisting of about 3,800 lin. ft. 36-in. pipe; 30 lin. ft. 24-in.; 60 lin. ft. 16-in. and 12-in. pipe; 70 lin. ft. 6-in., removing and relaying sidewalks, pavements, curb, etc.....	H. S. Holton, Dir. Pub. Service.
West Virginia..	Clarksburg.....	July 24, noon.....	Furn. two 200-horsepower water tube boilers complete.....	Scott C. Highland, Secy. W. W. Bd.
California.....	Los Angeles.....	July 24, 2 p.m.....	Granting franchise to lay and maintain water pipes for period of 40 years in certain portions of the county.....	H. J. Lelande, County Clerk.
Ontario, Can...	Burnaby.....	July 24, 5 p.m.....	Furn. about 138 sluice and special valves from 3 to 24-in.....	W. Griffiths, Clk. Mun. Council.
			BRIDGES	
Ohio.....	Cincinnati.....	July 7, noon.....	Constr. concrete bridge at intersection of German and Compton roads in Springfield township.....	Stanley Struble, Pres. Bd. Co. Comrs.
Kansas.....	Alma.....	July 7.....	Constructing seven bridges in Wabaunsee County.....	C. C. Stotler, County Clerk.
Florida.....	Jacksonville....	July 7, 10 a.m.....	Constr. wooden bridge over Dead River on Duval road; and constr. Duval County's half of a bridge over Nassau River, Duval Road.....	Gail L. Barnard, County Engr.
Michigan.....	Grosse Isle.....	July 8.....	Constructing a structural steel swing bridge.....	B. Feathers, Twp. Clerk.
Kansas.....	Eldorado.....	July 8, noon.....	Constr. reinforced concrete bridge between Butler and Harvey C.	M. L. Arnold, County Clerk.
Indiana.....	Richmond.....	July 8, 11 a.m.....	Constr. a 24-ft. concrete span bridge in Green Twp.; an 18-ft. span on the Cart Road North of Richmond; constr. a concrete floor on the Canal Bridge at Hagerstown; constr. concrete crete wall and earth filled approach of the Middleboro Bridge	Demas S. Coe, County Auditor.
California.....	Redding.....	July 10, 2 p.m.....	Constr. steel and conc. wagon bridge over Fall River at Fall River Mills.....	S. M. Witherow, Clk. Bd. Superv.
Pennsylvania...	West Chester....	July 10.....	Erecting a stone arch bridge over Chester Creek.....	F. G. Arnold, Commissioner.
New Jersey....	Camden.....	July 10, 11:30 p.m...	Constructing two concrete culverts.....	J. J. Albertson, County Engineer.
New Jersey....	Trenton.....	July 11.....	Constr. a steel and conc. bridge over Herrontown Rd., Princetown township.....	Frank J. Eppele, County Engineer.
Indiana.....	Ft. Wayne.....	July 12, 10 a.m.....	Constr. a bridge over St. Joe River, at Tennessee ave.....	Calvin H. Brown, County Auditor.
Ohio.....	Cleveland.....	July 12, 11 a.m	Constr. concrete bridge in Cleveland Heights twp. & retain. wall	John R. Goldenbogen, Clk. Bd. C. C.
New York.....	Massena.....	July 15, noon.....	Building a bridge.....	B. S. O'Neill.
Ohio.....	Cleveland.....	July 19, 11 a.m.....	Bridge Extension, South Woodland road.....	John F. Goldenbogen, Clk. Bd. C. C.
Arkansas.....	De Witt.....	July 22, 10 a.m.....	Constr. eleven bridges, concrete abutments and footings in Arkansas County.....	I. C. Gibson, County Clerk.
Indiana.....	South Bend.....	July 26.....	Constr. a $65,000 reinforced concrete bridge; and a $50,000 plate girder bridge at Mishawaka. W. S. Moore, Engineer..	County Comrs.
			LIGHTING AND POWER	
Australia.....	Brisbane.....	Jan. 30, noon.....	Designs, supply and erection at Mount Crosby Pumping Station of alternatively one, two and three complete units consisting of power generating pumps and plants, etc.....	Geo. Johnston, Albert St., S.&W.Bd
			FIRE EQUIPMENT	
South Dakota..	Gettysburg.....	July 11, 8 p.m.....	Furn. 750 ft. of 2½-in. fire hose; one service hose cart.....	R. L. Flickinger, City Auditor.
Iowa.....	Sioux City.....	July 15, 10 a.m.....	Furn. one combination hose and chemical wagon, standard equipment, weight over 3,000 lbs.....	R. S. Whitley, Supt. Pub. Safety.
			MISCELLANEOUS	
New York.....	Kingston.....	July 7, 7:30 p.m....	Constructing a municipal building.....	John T. Cummings, City Clerk.
Kansas.....	Hutchinson.....	July 7, noon.....	Erecting a municipal building.....	Edward Metz, City Clerk.
Pennsylvania...	Erie.....	July 10, 8 p.m.....	Constructing garbage disposal plant.....	Thomas Hanlon, City Clerk.
New York.....	Buffalo.....	July 10, 11 a.m.....	Erecting one story fireproof garage for Police Dept.....	Francis G. Ward, Comr.
Connecticut....	Hartford.....	July 10, 11 a.m.....	Constr. new fire station.....	Jos. Buths, Secy. Bd. C. & Sup.
Ohio.....	Columbus.....	July 10.....	Constr. grease extract. plant at garbage reduction plant.....	H. S. Holton, Dir. Pub. Service.
Alabama.....	Decatur.....	July 11, 8 p.m.....	Constructing a city hall.....	H. A. Skeggs, Mayor.
Minnesota.....	Caledonia.....	July 11.....	Constructing a brick and cement city hall.....	C. S. Trask, Village Clerk.
Indiana.....	Huntington.....	July 11.....	Constructing a garbage crematory.....	H. I. Young, City Clerk.
New Jersey....	Camden.....	July 12.....	Furn. 124 ballot boxes 18-in. x 18-in. x 20-in.....	John T. Rodan, Chm. Elec. Com.
New Jersey....	Passaic.....	July 12, 8 p.m.....	Installing police signalling system, fire alarm system and underground construction.....	Thomas R. Watson, City Clerk.
Rhode Island...	Providence.....	July 15, noon.....	Constructing 2 comfort stations.....	John H. Higgins, Chm. Com.
Florida.....	Orlando.....	July 17, noon.....	Improving the St. Johns River ferry at Geneva ave. crossing by deepening, widening and straightening cut-off channel.....	B. M. Robinson, Clk. Circuit Court.
Iowa.....	Oskaloosa.....	July 24, 5 p.m.....	Constructing a city hall building.....	T. H. Carlin, City Clerk.
Indiana.....	South Bend.....	Aug. 3, 10 a.m.....	Furnishing 50 or more voting machines.....	John W. Harbou, Auditor.

STREET IMPROVEMENTS

Anniston, Ala.—Calhoun County Road and Revenue Commissioners are considering $300,000 bond issue for road construction.

Jonesboro, Ark.—Craighead County will construct road from Bono to Greene County line; County Judge Heywood and Surveyor Ben Eddins are making surveys.

Alhambra, Cal.—City Trustees have ordered improvement of five streets.

Hermosa Beach, Cal.—City Trustees have passed resolutions providing for construction of 2 miles of cement walks, 22 ft. wide, along ocean front.

Sacramento, Cal.—Plans and specifications for asphalting Cutter Ave. from J to M St. roads in East Sacramento have been submitted by County Surveyor Miller; bids have been ordered advertised for.

Tampa, Fla.—Board of Public Works will pave Michigan Ave., between Twenty-first St. and Twenty-second St., and Twentieth St., between Michigan and Eighteenth Ave.

Freeport, Ill.—Paving of Apple and Iroquois Sts. is being considered.

Mt. Sterling, Ill.—Citizens have voted $10,000 bonds to build sidewalks.

Mishawaka, Ind.—Board of Public Works has ordered improvement of West Fourth and North Race Sts.

Denison, Ia.—Council has decided to proceed to pave many streets of city.

Oelwein, Ia.—Council has decided to pave about 30 blocks this summer.

Sioux City, Ia.—Council has passed resolution to pave Ninth, Eleventh, Jones and Virginia Sts.

Boston, Mass.—Following streets have been ordered improved: Fottler Road, Dorchester; Bradford Ave. and Farrington Ave., West Roxbury; Wallingford Road, Brighton; the extension of Coleman St., Dorchester, and the extension of Sachem St. from Parker Hill in Ward 19; Frost Ave., from Boutwell St. to Fairview St.; Harmon St., from Oakland St.; Douglas St.; Doris St., from Dorchester Ave. to Gardner Ave.; Bryant St., from Huntington Ave. to Ruggles St.; Glenville St., from Harvard Ave., Dorchester; Spoffard Road, from Commonwealth Ave. to Princeton Ave., Allston; Greenleaf St., from Leon St. to Rogers Ave.

Gloucester, Mass.—Council has voted to invite new bids for constructing Causeway St. to Annisquam Island.

Detroit, Mich.—Council has decided to pave Lincoln and Foreman Aves. and 24th St.; estimated, $25,000.

Pontiac, Mich.—City proposes to pave Saginaw St. with brick at cost of $50,000.—C. L. Groesbeck, City Clerk.

Saginaw, Mich.—Fremont Township will vote Aug. 22 on $16,000 bonds to build stone roads.—Frank Short, Supervisor.

Aberdeen, Miss.—First Supervisors' District of Monroe County will vote July 7 on $100,000 bonds for road construction.

Carthage, Mo.—City received no bids for grading, graveling and oiling Main st.

St. Louis, Mo.—Board of Public Works is considering construction of granitoid sidewalks on large number of streets.

Omaha, Neb.—Bids for proposed paving will be readvertised.

Bayonne, N. J.—Council is considering improvement of West Twenty-second St.

Trenton, N. J.—Board of Freholders is considering proposition to resurface Lawrence road, from Mulberry st. to the Presbyterian church in Lawrenceville. State Road Commissioner Stevens has agreed to have State defray half the cost of improvement, which will require an outlay of probably $30,000.

Trenton, N. J.—City received no bids for proposed $63,200 bond issue for paving.

Brooklyn, N. Y.—Board of Estimate and Apportionment has passed resolution to increase its previous appropriation of $450,000 for elimination of grade crossings along main line of Long Island R. R., between Sunnyside Yard, Long Island City and Jamaica, on Montauk division through Richmond Hill and portions of the Atlantic Ave. division and old Southern Road in Jamaica to $575,000.

Rochester, N. Y.—Council has adopted ordinance to construct asphalt pavement on East Ave.; cost, about $50,000.

Lumberton, N. C.—Gilbert C. White, Durham, desires prices on asphalt and vitrified brick paving on 5-in. concrete base.

Barberton, O.—Council has passed bond ordinance for paving of Third St., from Baird to Erie R. R.; Creedmoore, between Third and Fourth; Fourth, between Creedmore and Moore; also Wunderlich Ave.

Bellaire, O.—Mayor Wassereau has recommended grading and sidewalking of all streets leading out of city.

Philadelphia, Pa.—Grand Jury has recommended repaving of Broad St., between Arch and Callowhill Sts.

Narragansett, R. I.—Town has voted $9,000 appropriation for roads; $6,000 of this will be used in rebuilding old roads with tar surface.

Groverton, Tex.—Citizens have voted bonds for good roads.

Palestine, Tex.—Precinct No. 1, Anderson County, has voted in favor of issuing good roads bonds to amount of $150,000.

CONTRACTS AWARDED

Alhambra, Cal.—To O. F. Easley, for improvement of Main st., about $30,000.

Los Angeles, Cal.—By County Board of Supervisors to P. A. and C. H. Howard for building section of the county highway between Alhambra and El Monte, $23,957.

Richmond, Cal.—Paving Fourth st., to James Rutherford, $14,297; Nevin ave. and Eleventh st., to G. W. Cushing, at $10,605 and $13,305; Eighth, Twelfth and Thirteenth sts., to McMaster & Word, $13,003, $11,626 and $11,536; Fourteenth st. to J. J. Davis, $11,138. J. R. Vaughn is City Clk.

Quincy, Cal.—By Board of Supervisors to the Great Western Power Co. for $13,000 to construct the new road from Wolf Creek to Nevins; work will be started at once.

Denver, Col.—By Board of Public Works, for paving Broadway from Ellsworth to Exposition st., to Thomas J. Tully, $60,831; asphalt will be used.

Muncie, Ind.—By Board of Works to William Torrence for construction of 10-ft. cement alley between Howard St. and the L. E. & W. R. R., from Madison to Monroe St., $1.60 per lin. ft.

Dubuque, Ia.—Laying about 24,243 sq. yd. macadam, 9359 lin. ft. combined curb and gutter, etc.; Grandview Ave. to C. B. McNamara & Co., 10th, 12th and 15th Sts. to Kenety & Lee, and Longworth Ave. to T. J. Hassett.

Springfield, Mass.—To Warren Bros. Co., 59 Temple st., Boston, to lay bitulithic pavement on four streets, about 9700 sq. yds., $2.50 per sq. yd.

Detroit, Mich.—Paving to Julius Porath, 34 McGraw Bldg., San Antonio, Division and Maple Sts., $15,155; to J. A. Mercier, 211 Hammond Bldg., for Brooklyn Ave. and Farnsworth St., $11,909; to Thos. Currie, 20 McGraw Bldg., for Maple St., between St. Aubin and Joseph Compau Sts., $9,293.

Albert Lea, Minn.—Paving 32,280 sq. yd. creosoted blocks on Newton. William, Clark and other streets to Fielding & Shepley, St. Paul, $72,513.

Columbia, Mo.—Constructing concrete sidewalks to G. W. Barkwell and J. A. Stewart, Columbia, $3,226, and 2800 sq. yd. of brick paving to Columbia Paving Co., Columbia, $5,100.

Fulton, Mo.—To J. A. Stewart, of Columbia, for 9000 sq. yd. brick paving on 5-in. concrete base, asphalt fill, $2 per sq. yd.; concrete curb, 40c. per lin. ft.; total, $22,718, and 12,500 sq. yd. macadam, $13,423.

Portsmouth, N. H.—Laying 70,000 sq. yds. of brick block paving, to Wm. L. Dolan & Co., of Boston, Mass.

Morristown, N. J.—Repaving local streets to Warren Bros., Boston; county roads will be made of bitucrete, $1.49 per sq. yd., and on town roads amesite will be used, $1.30 per sq. yd.

Morristown, N. J.—By the Board of Aldermen, for repair of Morris st. and Speedwell ave., to Warren Brothers, $1.49 sq. yd.

Trenton, N. J.—Paving Quarry alley with Belgian blocks, to the A. A. Rose Construction Company; McGovern Company's bid was lowest, but was declared defective.

Albany, N. Y.—Building Warrensburg-Chestertown, Part 1, Road No. 5157, 5.54 miles in length, and Warrensburg-Chestertown, Part 2, Road No. 5158, 6.5 miles, to Joseph Walker, New Platz, $81,978.60 for resiidium; also bid $85,578.60 for Bermudez, and $85,578.60 for Trinidad.

Brooklyn, N. Y.—Regulating and paving with asphalt on concrete foundation 13th Ave., from 37th St. to New Utrecht Ave.., to Brooklyn Alcatraz Asphalt Co., 407 Hamilton Ave., Brooklyn, as follows: 21,250 sq. yd. asphalt pavement outside railroad area—5 years maintenance, 87c.; 218 sq. yd. asphalt pavement within railroad area, no maintenance, 87c.; 2985 cu. yd. concrete for pavement foundation outside railroad area, $5; 30 cu. yd. concrete for pavement foundation within railroad area, $5; total, $33,-752; total of other bids: Barber Asphalt Paving Co., 30 Church St., N. Y. City, $39,-533; Cranford Co., 52 9th St., Brooklyn, $34,956; Uvalde Contr. Co., 1 Broadway, N. Y. City, $35,689.02; regulating, grading, curbing and laying sidewalks on 64th St., from 6th Ave. to Ft. Hamilton Ave., to Paladine & Bros., 59th St. and 13th Ave., at the following bid: 46,230 cu. yd. earth excavating, 28c.; 5260 lin. ft. cement curb, 1 year maintenance, 45c.; 25,930 sq. ft. cement sidewalk, 1 year maintenance, 14½c.; total $19,071. Totals of other bids: Robertson Construction Co., 344 79th St., $31,021; John J. Guinan, Gravesend Ave. and Neck Rd., $23,222; M. F. Hickey, 6th St. and 2d Ave., Brooklyn, $24,485; W. L. Castle, Johnson Pl. and Snyder Ave., $19,400; Norton & Gorman, 301 Douglas, $19,400; John Connor, 262 Rogers Ave., $25,-515; John J. Curran, 254 Orington Ave., $29,894.

Akron, O.—By County Commissioners to W. W. Kelly for paving Merriman Road, $29,980.

Canton, O.—To Piero & Talberetto for paving as follows: Gibbs St., $17,678; William St., $6,518; S. Court St., $6,772; brick block or concrete foundation will be used.

Astoria, Ore.—Paving Commercial St. to Alex. Frederickson, $22,740.

Hillsboro, Ore.—Paving to Warren Construction Co., Portland, bitulithic product, $52,784.18, itemized as follows: Excavation, cu. yd., 60c.; pavement, sq. yd., $2.07; curb and gutter, plain, lin. ft., 75c.; curb and gutter, reinforced, $1; gutter, 18 in., 30c.; pavement, guarantee 5 years, sq. yd., 8c.; driveways, 6-in. cement pavement, sq. ft., 18c.; 2½-ft. radii curb, lin. ft., 75c.; 6-ft. radii curb, 65c.—L. C. Kelsey, Selling Bldg., Portland, City Engineer

Portland, Ore.—By Street Committee of Executive Board, for the improvement of streets as follows: Washburn st., from Lombard to Willis, grading and concrete curbs and walks, to Kelkeny Bros., $6,720; East 39th st., from Prescott to Humboldt, grading and concrete curbs and walks, to Carter Bros., $2,109; East 26th st., from Powell st. to Simon's addition, grading and concrete curbs and walks, to Keenan Bros., $2,257; East 17th st., from Killingsworth to Ainsworth, grading and concrete curbs and walks, to Jeffery & Bufton, $3,157; East 32d st., from Francis to Holgate, grading and concrete curbs and walks, to Bechill Bros., $4,600; Holman st., from East 13th to East 18th, grading and concrete curbs and walks, to Baker Bros. & Hayden, $3,717; College st. district, asphalt pavement, to Barber Asphalt Paving Co., $60,735; East 38th st., from Prescott to Humboldt, grading and concrete curbs and walks, to Carter Bros., $2,652; Wygant st., from Denver to Gay, grading and concrete curbs and walks, to Carter Bros., $2,630; Winchell st., from Delaware to Peninsula, grading and concrete curbs and walks, to Baker Brothers & Hayden, $3,058; East 24th st., from Alberta to Killingsworth, grading and concrete curbs and walks, to Carter Bros., $3,681; East 15th st., from Prescott to Shaver, grading and concrete curbs and walks, to Coast Construction Co., $3,896; East 40th st., from Prescott to Humboldt, grading and concrete curbs and walks, to Joplin & Meeks, $3,299; East 16th st., from Killingsworth to Holman, grading and concrete curbs and walks, to Coast Construction Co., $5,769; Dekum ave. district, grading and concrete curbs and walks, to Carter Bros., $13,881.

Harrisburg, Pa.—Paving 15 streets to the Barber Asphalt Paving Co., Nectarine, Swatara to Berryhill, at $1.79 per sq. yd. for paving and 78c. for granite curbing; Shrub, from Twelfth to Fourteenth, $1.79 and 78c.; Linden, Bailey to State, $1.79 and 78c.; Balm, Bailey to State, $1.77 and 78c.; Summit, Bailey to King, $1.79 and 78c.; Summit, Derby to Thompson, $1.79 and 78c.; following to the Central Construction & Supply Co., Berryhill, Cameron to Thirteenth, $1.91 and 77c.; Hunter, Crescent to Fifteenth, $1.81 and 77c.; Whitehall, Eighteenth to Prospect, $1.76 and 77c.; Forrest, Sixth to Jefferson, $1.59 and 77c.; Fifteenth, Berryhill to Catherine, $1.74 and 77c.; Sixteenth, Berryhill to Catherine, $1.74 and 77c.; Catherine, Fifteenth to Seventeenth, $1.74 and 77c.; Naudain, Fifteenth to Seventeenth, $1.74 and 77c.; Peffer, Second to Seventh, $1.59 and 77c.

Ft. Douglas, Utah.—Construction of roads, catch basins, concrete walks, etc., to Thos. J. Everill, of Salt Lake City, $13,318.

Spokane, Wash.—Grading, curbing, paving and sidewalking Hatch st., to John F. Costello, $30,000.

Gladstone, Man., Can.—Laying approximately 40,000 sq. ft. granolithic sidewalks to F. Byers, of Neepawa, 8c. per sq. ft.

BIDS RECEIVED

Vernon, Cal.—B. F. Ford, Los Angeles, was lowest bidder for the street improvements, $45,700. E. R. Werdin, of Los Angeles, bid $52,000; work will include 1¾ miles of asphalt paving, 3½ miles of oiled road.—Joseph Hurley, Thorpe Bldg., Los Angeles, City Engineer.

Denver, Col.—Paving in West Twenty-third Ave. paving district No. 2: Commonwealth Construction Co., $22,895.36; Denver & Pueblo Construction Co., $22,293.44; the Coloroda Co., $27,7[illegible].52; estimate of Board of Public Works was $24,306.56.

Newnan, Ga.—Paving from plans of J. B. McCrary & Co., Atlanta; (a) price per sq. yd.; (b) totals, using 4 x 18-in. granite curb; Atlantic Bitulithic Co., Richmond, Va., bitulithic, (a) $2.20, (b) $52,174; West Construction Co., Chattanooga, Tenn., asphalt, (a) $1.89, (b) $45,584; Graves-Mathews Paving Co., Birmingham, Ala., brick, (a) $1.85, (b) $43,689; Creosoted Wood Block Paving Co., Gulfport, Miss., wood block, (a) $2.28, (b) $54,143; Southern Paving & Construction Co., Chattanooga, Tenn., 2 bids, brick, (a) $1.88, (b) $44,455, asphalt, (a) $1.64, (b) $39,175; Jamison & Hollowell, Montgomery, Ala., three bids, wood block, (a) $2.25, (b) $53,392, kassam pavement, (a) $1.65, (b) $40,192, brick, (a) $1.95, (b) $46,792.

Fort Wayne, Ind.—Paving streets: Clinton st., Superior st. to St. Mary's bridge, Moellering Construction Co., brick, $9.59 per lin. ft.; Barber Asphalt Co., asphalt, $9.69; Trippeer & Son, $9.55, for Bessemer brick; Clinton st., St. Mary's river to Fourth st., Moellering Construction Co., $7.63; Barber Asphalt Co., $7.68; Trippeer & Son, $7.70; Hoagland ave., Leith st. intersection, Moellering Construction Co., $9.40; Barber Asphalt Co., $9.38; Leith st., Calhoun st. to Hoagland ave., Moellering Construction Co., $6.97; Barber Asphalt Co., $7.02.

Fall River, Mass.—Brick paving blocks: C. T. Willard, New York, $29.50 and $27.50; Luke B. Mullens, Boston, $30 and $29.50; Shawmut Paving Brick Works, Boston, $28; Mack Manufacturing Co., Philadelphia, $27.81; Willard M. Pettey, $27.70; John F. Johnston Co., $30.36 per thousand or $1,518 for the total order; Borden & Remington Co., $21.50, $27.40, $17 and $32.

Portsmouth, N. H.—Furnishing and lay-1540 lin. ft. straight edge stone, 14,250 sq. yd. concrete base, 3,200 sq. yd. granite block and 11,050 sq. yd. brick block pavement; reset 7890 lin. ft. existing edge stone, 14,250 sq. yd. to be made in preparing roadway excavation: Jos. Sacco, $43,643.70; Marcello Construction Co., $44,459; J. F. O'Connell, Boston, Mass., $48,696; Fitzgibbons & Dolan, Beverly, Mass., 2 bids, $45,-651 and $43,885; C. W. Dolioff & Co., Boston, 2 bids, $44,712.80 and $43,828; Field, Barker & Underwood, Philadelphia, Pa., $45,105; S. Barton, Lowell, Mass., $50,997; J. B. O'Rourke, Boston, Mass., 3 bids, $44,-547, $43,332 and $44,105; Simpson Bros., Inc., Boston, Mass., 2 bids, $43,835 and $42,410; Carroll Construction Co., Brookline, Mass., $46,451; Coleman Bros., Boston, Mass., $45,-490; Hub Construction Co., Boston, Mass., $44,772.

Trenton, N. J.—Paving Second St., J. S. E. Pardee. Texaco asphalt, $1.65; vitrified brick, $2.20; Gibbs & Morgan, Bermudez asphalt, $1.96; vitrified brick, $2.25; Ginder Construction Co., Texaco asphalt, $1.68; vitrified brick, $2.25; McGovern Construction Co., McGovern brand of asphalt, $1.64; vitrified brick, $2.25; Newton Paving Co., Bermudez asphalt, $1.72; Trinidad asphalt, $1.61; vitrified brick, $2.50; J. F. Shankey Co., Trinidad asphalt, $1.65; vitrified brick, $2.25; J. C. Rock, sheet asphalt, $1.59; vitrified brick, $2.30; United Paving Co., Acme asphalt, $1.66; Texaco, $1.59; vitrified brick $2.10; J. C. Rock was the lowest bidder on the Filbertine pavements for Genesee st. and Ferry st., $1.49; the McGovern Contracting Co. bid $1.53 for filber-

tine pavements on Mercer st., Allen st., Prospect st., Hoffman ave., Charles st., and North Broad st.

New York, N. Y.—Paving with asphalt block on a concrete foundation Quarry Road, from Third Ave. to Arthur Ave.; lowest bidder, Hastings Pavement Co., as follows: 4900 sq. yd. of completed asphalt block pavement, $1.73; 745 cu. yd. concrete, including mortar bed, $5.92; 425 lin. ft. new curb, $1; 1300 lin. ft. old curb, 36c.; total, $13,780; Barber Asphalt Co. bid for the work, $13,843; for regulating grading, setting curbs, flagging sidewalks, laying crosswalks, etc.; lowest bidder, J. B. Malatesta, as follows: 1300 cu. yd. excavation, 80c.; 87,000 cu. yd. filling, 33c.; 4400 lin. ft. new curb, 70c.; 16,900 sq. ft. new bluestone flag., 24c.; 2400 sq. ft. new bridgestones, 50c.; 6650 cu. yd. dry rubble masonry, $2.50; 20 cu. yd. rubble masonry in mortar, $5; 550 lin. ft. 12-in. vitrified pipe, $1.50; 300 lin. ft. 18-in., $2; 5M ft. timber and lumber, 1c.; 5000 lin. ft. guard rails, new, 25c.; 2 type "A" inlets, $50; 3 manholes, $50; 20 cu. yd. brick masonry, $10; 200 lin. ft. old guard rail, reset, 10c.; 500 lb. cast iron, 1c.; total, $57,961; totals of other bids: F. A. Curry, $72,257; Vinton Contr. Co., $71,955, and Perills & Shell, $67,748.50; lowest bidders for regulating, grading, setting curb, flagging, etc., other streets were: St. Lawrence Ave., Zingales & Delena, $11,795; Trebot Ave., L. J. Rice, $6,503, and Van Cortland Ave., Mason & Hanger Co., $13,443.

New York, N. Y.—Furnishing material and reconstructing and surfacing with Hudson River road gravel and asphaltic binder Bronx and Pelham Parkway, from Willamsbridge Road to the White Plains Road, in Bronx Borough, as follows—(a) 22,860 sq. yd. per sq. yd., (b) total: Continental Public Works Co., 2 Rector st., (a) $1.21, (b) $27,661; Daniel Roggu, 3071 Perry ave., Bronx, (a) $1.59, (b) $36,347.

New York, N. Y.—Regulating and repaving with wood block pavement on a concrete foundation Ave. B, from Houston St. to 14th St.: (a) Barber Asphalt Paving Co., $32,818; (b) Republic Construction Co., $31,976; (c) U. S. Wood Preserving Co., $30,772; (d) Uvalde Construction Co., $30,938; 4940 sq. yds. wood block pavement, including sand cushion, except the railroad area, (a) $2.99, (b) $2.85, (c) $2.70, (d) $2.85; 1590 sq. yds. wood block pavement in the railroad area, including sand cushion, no guarantee, (a) $2.95, (b) $2.85, (c) $2.70, (d) $2.85; 1390 cu. yd. Portland cement concrete, (a) $5.50, (b) $5.50, (c) $5.25, (d) $5; 6040 lin. ft. new bluestone curbs, (a) 90c., (b) 90c., (c) 93c., (d) 85c.; 50 lin. ft. old bluestone curb, redressed, rejointed and reset, (a) 40c., (b) 90c., (c) 20c., (d) 40c.; 16 noiseless heads and covers, complete, for sewer manholes, furnished and set, (a) $16, (b) $15, (c) $13.50, (d) $14. Regulating and repaving with wood block pavement on a concrete foundation Ave. C, from Houston St. to 12th St.: (a) Barber Asphalt Paving Co., $35,916; (b) Republic Construction Co., $35,647; (c) U. S. Wood Preserving Co., $33,741; (d) Barber Asphalt Paving Co., $34,570. 6640 sq. yd. wood block pavement, including sand cushion, except the railroad area, (a) $2.89, (b) $2.85, (c) $2.65, (d) $2.85; 1280 sq. yd. wood block pavement in the railroad area, including sand cushion, no guarantee, (a) $2.89, (b) $2.85, (c) $2.65, (d) $2.85; 1280 sq. yd. wood block pavement in the railroad area, including sand cushion (no guarantee), (a) $2.89, (b) $2.85, (c) $2.65, (d) $2.85; 1570 cu. yd. Portland cement concrete, (a) $5.50, (b) $5.50, (c) $5.25, (d) $5; 4800 lin. ft. new bluestone curb, furnished and set, (a) 90c., (b) 90c., (c) 93c., (d) 85c.; 100 lin. ft. old bluestone curb, redressed rejointed and reset, (a) 40c., (b) 90c., (c) 20c., (d) 40c.; 2 noiseless heads and covers, complete, for sewer manholes, furnished and set, (a) $16, (b) $15, (c) $13.50, (d) $14.

Troy, N. Y.—Regulating, curbing, grading and paving Collins ave., from Pawling to Maple ave.; for bituminous concrete pavement: John Warnock, $11,106: Warren Bros., $11,915; John H. Gleason, $12,322, for sheet asphalt pavement; John H. Gleason, $12,574; contract includes 3,150 sq. yds. of pavement, 2,280 lin. ft. of curb, 40 lin. ft. of old curb reset, three catch basins, six old catch basins repaired.

Youngstown, O.—Paving Myrtle ave.: H. E. McGraw & Son, $39,445.70; Kennedy Bros., $39,865.90; Martin Fleming, $39,989.80; A. Collucci, $39,989.80; E. J. Kane, $40,-558.70; Chambers & Heasley, $40,622.50; S. H. DeGroodt, $40,652.70; Youngstown Construction Co., $40,716.50; William Hynes, $40,899.80; M. P. Connelly & Son, $40,963.60; repairing asphalt paving: Cleveland Trinidad Paving Co., $2.90 per sq. yd.; Turner & Olsen, $3.05 per sq. yd.

Scranton, Pa.—Sunset st., Monsey ave. to Electric st., estimate $18,126: McDonald Construction Co., $1.81 sq. yd.; Warner-Quinlan Co., $1.95, and R. C. Ruthven, $1.80; Kressler court, Linden to Mulberry, estimate, $2,658.75, McDonald Construction Co., $1.93; Warner-Quinlan Co., $2.14, and R. C. Ruthven, $2; Wyoming ave., Green Ridge st. to Delaware st., estimate $4,247.25, McDonald Construction Co., $1.94; Warner-Quinlan Co., $1.95 ,and R. C. Ruthven, $1.85; Pine st., Washington ave. to Wyoming ave., stone block, estimate $4,889, McDonald Construction Co., $2.45, and Blewitt Paving & Construction Co., $2.10; Taylor ave., Gibson st. to Myrtle st., estimate $5,385.50, McDonald Construction Co., $1.84; Warner-Quinlan Co., $2.14, and R. C. Ruthven, $1.90; Myrtle st., Webster ave. to Irving ave., estimate $8,302.25, McDonald Construction Co., $1.87; Warner-Quinlan Co., $2.14, and R. C. Ruthven, $1.90.

Chattanooga, Tenn.—Paving Main St. on following specifications: Vitrified brick pavement on macadam foundation, 32,000 sq. yd.; vitrified brick pavement on 4-in. concrete foundation; bituminous macadam pavement on macadam foundation; bituminous macadam pavement on 4-in. concrete foundation; bituminous concrete pavement on macadam foundation; bituminous concrete foundation on 4-in. concrete foundation; grading roadway, 38,000 sq. yd.; grading for roadway, embankment borrow, 700 cu. yd.; concrete margin curb, 1600 lin. ft.; concrete combined curb and gutters, straight, 16,650 lin. ft.; concrete combined curb and gutters, circular, 700 lin. ft.; concrete gutters, 18 in. wide; concrete gutter, 24 in. wide, 500 lin. ft.; redressing old curb and resetting a margin curb, 1700 lin. ft.; rebuilding existing culverts and drains, as per plans, 5; storm water catch basins, with cast-iron inlets, as per plans, 10 lin. ft.; following were bidders: West Construction Co., bituminous concrete and concrete base, using Trinidad asphalt as a binder, $76,560; Noll Construction Co., bituminous macadam and macadam base, Standard Oil "C" as binder, $59,687.50; bituminous macadam and concrete base, using same binder, $76,647.50; 2½-in. bituminous macadam, with 6-in. macadam base, $66,407.50; Southern Paving & Construction Co., vitrified brick and macadam base, $69,717.45; vitrified brick and concrete base, $74,837.45; bituminous macadam and macadam base, Union Oil binder, no guarantee, $51,477.45; bituminous macadam and concrete base, California asphalt as binder, $55,317.45; bituminous concrete, macadam base, California asphalt as binder, $55,947.45; bituminous concrete, concrete base, California asphalt, $60,-757.45; H. S. Bosler, Chattanooga, liquid asphalt, attached specifications, $67,383; Southern Bitulithic Co., Nashville, vitrified brick, macadam base, $79,527.50; vitrified brick, concrete base, $87,527.50; bituminous concrete and macadam base, Warrens' Acme Puritan binder, $76,007.50; bituminous concrete base, same binder, $84,-007.50; J. C. Collins, Mt. Vernon, Ill., vitrified brick, macadam base, $80,957; vitrified brick, concrete base, $88,957; Smallwood & Co., bids only on curbs, gutters and catch-basins.

Spokane, Wash.—Street improvements; Engineer's estimate and lowest bidder given: Grading, curbing, parking and sidewalking Crown, Perry to Standard; estimate, $8,700; C. M. Payne, $6,720. Paving Rockwood and Highland Boulevards and Garfield road with asphalt macadam; estimate, $57,000; Spokane Paving & Construction Company, $51,000. Grading, curbing, parking and sidewalking Mission, Havana to Stone; engineer's estimate, $35,500; Massie Brothers & Long, $26,630. Same: Rockwood Boulevard, Hatch to Seventeenth; estimate $3,800; Spokane Paving & Constructing Company, $3,540. Same: Thirty-eighth, Perry to Grand; estimate, $9,200; Naylor & Norlin, $8,589. Same: Conklin, Fifth to Hartson; estimate, $3,060; Abbott & Joslin, $2,900. Same: Arthur, Newark to 12th; estimate, $12,400; Spokane Paving & Construction Company, $12,000. Grading, curbing, sidewalking and paving with Hassam Washington, Spofford to O.-W. R. & N. railroad; estimate, $29,000; Inland Empire Hassam Paving Company, $20,280. Grading, curbing, parking and sidewalking Twenty-third, Jefferson to Wall; estimate, $7,100; J. C. Kennedy, $7,228. Same: Lidgerwood, Rowan to Liberty; estimate, $27,000; Massie Brothers & Long, $20,949. Same: Jefferson, Wellesley to Garland; estimate, $10,500; Massie Brothers & Long, $8,929. Grading and paving with asphalt Howard, Twenty-third to Twenty-ninth; estimate, $21,000; J. F. Hill, $18,970. Grading, curbing, parking and sidewalking Gordon, from alley between Calispel and Washington to Post; estimate, $8,950; C. M. Payne, $7,130. Same: Rich, Division to Pittsburg; estimate, $21,500; Massie Bros. & Long, $16,288. Same: Euclid, Hemlock to Lindeke; estimate, $5,300; Massie Bros. & Long, $4,035. Same: Wall, Fourteenth to Eighteenth; estimate, $7,000; Abbott & Joslin, $6,700. Same: Pittsburg, Sprague to Fourth; estimate, $5,650; M. Payne, $4,445.

Spokane, Wash.—Grading, curbing, parking and sidewalking of Hatch st., Seventeenth to Twenty-ninth aves., estimate, $25,670: John F. Costello, $30,000; Archer & Madison, $33,898; Robinson & Foster, $35,000. Lincoln st., Ninth to Cliff ave., estimate, $3,000: J. C. Kennedy, $3,490; Archer & Madison, $4,400. Paving Wall st. with Hassam concrete, Summer to Fourteenth ave, estimate, $15,400: Inland Empire Hassam Paving Co., $15,509. Grading, curbing, parking and sidewalking Lincoln st., Cliff to Wall st., estimate $1,650: J. C. Kennedy, $2,150; Archer & Madison, $1,863. Sidewalking and crosswalking of Heroy ave., Crestline to Pittsburg st., estimate $1,970: Five bidders, of whom Massie Brothers & Long were the lowest, at $1,690. Sewer on Sixth ave., Madison st. to 288 ft. west, estimate $569: Archer & Madison, $558; J. C. Clark, $545. Paving with brick of Eighth ave., Canton to Chestnut st., estimate, $3,550: Mitchell Bros., $3,960; Robinson & Foster, $4,196; J. F. Hill, 3,893.

Racine, Wis.—Paving La Salle st., 9150 sq. yds. with 5790 lin. ft. combined curb and gutter; Standard Paving Company, Chicago, $1.89 per yd. for Trinidad asphalt and 55c. for curb and gutter; McCugo-Bullock, Construction Co., Waukegan—Various kinds of brick at $2.05 and 48c.; James Cape & Sons, vitrified brick, $1.80; Purington brick, $1.78; sheet asphalt, $1.84; asphalt concrete, $1.74; combination gutter, 47c. Birdsall-Griffith Construction Co., brick, $1.79; Genaseo asphalt, $1.57; curb, 55c. Western Improving Co., brick, $1.80; Creosote, $2.50; asphalt concrete, $1.48; curb, 60c. N. F. Reichert, brick, $1.83; Creosote, $2.50; asphalt concrete, $1.84; curb, 50c.

Superior, Wis.—Paving Belknap st. the low bidders were as follows: Asphalt, P. McDonnell, $1.80 outside of street car tracks and $1.90 inside; creosote blocks, John Diffor, $2.32 outside tracks and $2.39 inside; brick, P. McDonnell, $2,12 outside tracks and $2.20 inside; bitulithic macadam, E. A. Dahl, $2.12 outside tracks and $2.20 inside. John ave., from Winter st. to Belknap, low bidders were: Asphalt, P. McDonnell, $1.80; brick, Sid Riches, $2.05; creosote blocks, Sid Riches, $2.34; bitulithic macadam, E. A. Dahl, $2.12. On John ave., from Third st. to Winter st., the bids were: Asphalt, Burke Bros., $2.10; creosote blocks, P. McDonnell, $2.33; brick, Sid Riches, $2.07; bitulithic, E. A. Dahl, $2.12.

SEWERAGE

Hartsell, Ala.—City will issue $28,000 bonds for sewers, water works and electric light plant; plans completed; bids will be asked when bonds are sold.—Xavier A. Kramer, Magnolia, Miss., Engineer.

Pacific Grove, Cal.—Plans are being prepared by T. B. Hunter, Monterey, for construction of system of storm sewers to cost about $62,000.

San Francisco, Cal.—In connection with construction of outlet for sewer for the Ingleside district, Board of Public Works has asked Supervisors to make available $10,000 for purchase of twenty-four-in. c.-i. pipe, which is to be laid across Lake Merced tract.

Ansonia, Conn.—Merrill, Oldham & Co. have purchased $40,000 sewer bonds.

Columbus, Ga.—Mayor Browne has appointed committee to investigate cost, etc., of new and complete system of sanitary sewers.

Terre Haute, Ind.—Plans have been completed by D. M. Roberts for construction of 1000 ft. of 15-ft. reinforced concrete sewer; also for 40-in. vitrified brick and 36 to 10-in vitrified pipe sewers; cost about $100,000.

Kentwood, La.—Citizens will vote Aug. 1 on $50,000 bonds for construction of sewer system and water works.

Sparta, Mich.—E. H. Christ is outlining sewer system for village.

Ely, Minn.—Council is considering Mr. Brownell's plans for sanitary sewer system which State Board of Health approved; a part of plans for system provided for large tank, which would cost at estimate price of around $2,000.

St. Paul, Minn.—Board of Public Works is considering construction of Thomas and Van Buren St. sewer system; cost, about $65,000.—Oscar Claussen, City Engineer.

Shelbina, Mo.—Citizens have voted $84,000 bonds to install sewerage and water works system.

Butte, Mont.—City has decided to construct sanitary sewers. P. A. Gow, City Engineer.

Lincoln, Neb.—City Engineer Adna Dobson has presented Council plans and specifications for extensions of storm sewers.

Monmouth Beach, N. J.—Borough Council has passed resolution favoring adoption of Potts system of sewerage.—Jesse P. Manahan, Mayor.

Skillman, N. J.—Consulting Engineer Clyde Potts, 30 Church St., New York, has been retained to design plans for trunk sewer and sewage disposal works for village.—Dr. David C. Weeks, Resident Superintendent.

Philadelphia, Pa.—City is in need of sewer construction to cost about $3,000,000.

Susquehanna, Pa.—Bids will be received about July 11 for construction of five sewers.—D. J. Lynch, 513 Franklin Ave., Borough Secretary.

Pomeroy, Wash.—Engineer J. E. Tupper has estimated cost of installing sewer system at $35,000.

Vancouver, B. C., Can.—Citizens have passed $750,000 by-law for sewer improvements.

CONTRACTS AWARDED

Michigan City, Ind.—To August Schneider for building sewer along Franklin St., 62½c. per lin. ft.

St. Louis, Mo.—To Patrick McIntyre by the Board of Local Improvements, for the construction of the Harlem Creek sewer, District No. 6, $58,817; work includes 5254 ft. of brick sewer and 20,037 ft. of pipe sewer, with inlets, manholes, etc.; construction of Harlem Creek sewers in District No. 7, to City Construction Co., of St. Louis, $90,295; work includes brick and pipe sewers with inlets, manholes and other appurtenances complete, brick sewers, 7418 ft., 78 to 30 ins. in diameter; pipe sewers, 26,281 ft., 27 to 12 ins. in diameter.

Albany, N. Y.—Building sewers River Road to Evelyn Bros., $1,616.49; Pine Woods Ave. sewer to Henry Golden, $767.53; Forrest Ave. sewer to Edward Walsh, $806.

Fulton, N. Y.—By Board of Public Works for sewer extension in this city, to L. E. Whitmore, Binghamton, for $15,439.25; work will be commenced at once.

Johnstown, N. Y.—Constructing trunk sewer along Cayadutta Creek to A. M. Banker, Johnstown, $17,857.

Hillsboro, Ore.—Sanitary sewerage system to Mason & Combs, $35,340.28; other bidders, Bidwell-Hayden & Co., $36,183.64; James Kennedy Construction Co., $38,758.80; Williams & Beggs Co., $41,114.40; Hugh McLain, $41,505.50; Peguit-Ciebisch-Joplin, $41,929.06; John Construction Co., $44,502.80; Jeffrey & Bufton, $46,728.32; J. & M. Keating, $48,080.30; Johnson-Anderson Co., $48,822.40; itemized bid of Mason & Combs is as follows: Excavation, cu. yd., 60c.; vitrified pipe, lin. ft., 8-in., 25c; 10-in., 40c.; 12-in., 45c.; 14-in., 60c.; 16-in., 90c.; 18-in., $1.30; Y's, 8 x 6-in., $1.35; 10 x 6-in., $1.90; 12 x 6-in., $2.60; 14 x 6-in., $3.65; 16 x 6-in., $4.65; 18 x 6-in., $5.80; drain tile, lin. ft., 4-in., 4c.; 6-in., 8c.; 4 x 4-in. Y's, ea., 80c.; 6 x 6-in., 85c.; manholes, ea., $65; manholes, add. depth per ft., $5; septic tank, complete, $500; standard flush tanks, ea., $100; special flush tanks, ea., $75. Storm sewerage system to James Kennedy Construction Co., Salt Lake City, $28,273.50; other bidders, Bidwell-Hayden Co., $30,217.10; Mason & Combs, $32,284.60; Peguet-Giebisch-Joplin, $32,388.80; Williams & Beggs Co., $32,684.10; Hugh McLain, $34,870.90; John Construction Co., $35,396.70; J. & M. Keating, $36,138.70; Jeffrey & Bufton, $36,882.36; Johnson-Anderson Co., $37,368.75; itemized bid of successful bidder is as follows: Excavation, cu. yd., 55c.; vitrified pipe, lin. ft., 8-in., 35c.; 10-in., 50c.; 12-in., 65c.; 14-in., 75c.; 16-in., 82c.; 18-in., $1.25; 20-in., $1.40; 22-in., $1.80; 24-in., $2; 27-in., $2.25; 30-in., $2.70. Abstract bids No. 3, Y's, ea., 12 x 6-in., $1.25; 14 x 6-in., $1.75; 16 x 6-in., $2; 18 x 6-in., $3; 20 x 6-in., $1; 22 x 6-in., $1; manholes, ea., $45; catch basins, ea., $20; lump, complete, $250.—L. C. Kelsey, Selling Bldg., Portland, City Engineer.

West Chester, Pa.—Building outfall sewer mains to Corcoran Construction Co., $11,000; sewage disposal plant to Farrell Co., $46,000.

Providence, R. I.—Sewer work at Pomfret and Cemetery Sts. to Chas. Crankshaw, $13,486.90.

BIDS RECEIVED

Oakland, Cal.—Building sewers: Oakland sewer district No. 1, Chambers & Heafey, lowest bidder, $79,132.18; Michael Heafey, $97,184.56; Bates, Borland & Ayres, $109,945.77. District No. 2, Contra Costa Construction Company, lowest bidder, $77,877.79; alternative, $76,648.04; Bates, Borland & Ayres, $82,412.28; C. D. Vincent, $81,544.36; alternate, $80,119.66. District No. 3, C. D. Vincent, lowest bidder, $102,126.08; alternative, $100,267.58; Williams & Belser, $121,905.82; alternative, $119,807.77; Bates, Borland & Ayres, $116,589.04; Contra Costa Construction Company, $106,230.05. District No. 4, C. D. Vincent, lowest bidder, $110,625.72; alternative, $108,730.62; Bates, Borland & Ayres, $135,922.67; Williams & Belser, $140,015.25; alternative, $142,200.30; Contra Costa Construction Company, $129,261.43; Western Engineering and Water Supply Company, $135,775.53.

Baltimore, Md.—Sanitary Contract No. 67, junction sewer at Sewage Pumping Station; M. J. Beach, 809 American Bldg., Baltimore, Md., $16,957; Ryan & Reilly, 1438 South Penn sq., Philadelphia, Pa., $20,937; W. H. & C. F. Thompson, 627-628 Law Bldg., Baltimore, Md., $21,668; B. F. Sweeten & Son, Baltimore, Md., $26,197; McCay Engineering Co., 9 East Lexington st., Baltimore, Md., $31,810; Wm. McCarthy & Co,. Baltimore, Md., $32,102; David Peoples, 60 Knickerbocker Bldg., Baltimore, Md., $51,559; Calvin W. Hendricks, Chief Engineer.

Detroit, Mich.—Completing first section of Fairview sewer, about 700 ft., Langley & Jeynes, lowest bidders, for $34,500.

Syracuse, N. Y.—Charles Bonn submitted lowest bid at $1,689.85 to Board of Contract and Supply for constructing sewer in Winton st.; other bidders: Albert Gaffey, $1,956; Anthony Sposato, $1,740.55; Philip Thomas, $1,973.95; Alexander Barr, $1,786.75; Samuel Bonn, $1,712.45; the sewer is to be eighteen in. in diameter from Burnet ave. to Hawley ave. and fifteen in. from Hawley ave. to Craton ave.; following proposals were received for constructing 12-in. pipe sewer in Robinson st. between Elm and Mather sts.: Albert Gaffey, $696.75; Anthony Sposato, $644.50; Alexander Barr, $834.50; Philip Thomas, $834.50; Charles Bonn, $1,021.50.

Spokane, Wash.—Lang & Smith were lowest bidders for building sewers in Ninth and Tenth sts., $3.860; engineer's estimate, $5,000. Twentieth st., $3,790; estimate $4,880; First Ward sewer, $7,790; estimate, $10,115; Garfield st., $11,460; estimate, $14,470.

Janesville, Wis.—Tibey Bros., of Dubuque, Ia., are lowest bidders for sewer construction work in city this year, $11,925.07.

WATER SUPPLY

Dothan, Ala.—Citizens will vote on issuing bonds to construct water works and electric light plant; has plans and specifications for power house costing about $75,000.

Hartsell, Ala.—City will issue $28,000 bonds for water works, sewers and electric light plant; plans completed; bids will be asked when bonds are sold.—Xavier A. Kramer, Magnolia, Miss., Engineer.

San Francisco, Cal.—Board of Public Works has been authorized to go ahead with repair and enlargement of water supply system at Relief Home, the cost of which was estimated at $16,000.

Washington, D. C.—An American consul in Canada reports that a city government in his district has determined to lay new 40-in. water main to afford the city additional protection in case of fire; the city engineers are now at work on the specifications, and when these are ready, which they are expected to be in a few weeks, bids will be called for 9 miles of 40-in. pipe. Address No. 6066, Bureau of Manufactures.

Farmersville, Ill.—Charles Nobbe, President of electric light plant, has been granted authority to install water system in this town; supply will be taken from creek.

Lake Zurich, Ill.—Citizens have voted to construct system of water works.

Ottawa, Ill.—Council has decided to ask for bids for construction of additional water mains in West Main and West Jefferson sts.

Peoria, Ill.—Council is considering laying of water mains in Stanley, Elizabeth, Proctor and Blaine Sts.

Tremont, Ill.—Citizens have voted $11,000 bonds to install water works.

White Hall, Ill.—Citizens have voted bonds for extension of water mains.

South Bend, Ind.—Indiana & Michigan Electric Co. is considering question of building 42-in. gravity intake to supply water to steam plant.—F. A. Bryan, Manager.

Inwood, Ia.—City has selected the Missouri Valley Engineering Co., of Mitchell, S. D., to design and superintend construction of complete water works system; estimated cost, approximately, $16,000.

Kentwood, La.—Citizens will vote Aug. 1 on $50,000 bonds for construction of water works and sewer system.

West Brookfield, Mass.—Town has voted to appropriate $1,000 for use of Water Commissioners, instructing them to employ competent engineer to investigate all plans for suitable water supply for town and to report as early as possible; they are also to give estimate of cost.

Flint, Mich.—W. S. Clark, Consult. Engr., 1050 The Spitzer, Toledo, O., has completed plans for installation of a filtration plant; cost about $400,000.

Shelbina, Mo.—Citizens have voted $84,000 bonds to install water works and sewerage system.

Helena, Mont.—Taxpayers have voted to purchase for $400,000 Helena water works plant.

Benson, Neb.—Citizens have voted $25,000 bonds for water extensions.

Broken Bow, Neb.—City will expend $14,000 this year installing additional water mains.

Haigler, Neb.—Citizens have voted $8,500 bonds for construction and equipment of water works and for fire protection.—W. F. Wood, Town Clerk.

Omaha, Neb.—Citizens have defeated proposed water bond issue.

Seward, Neb.—Council has voted $13,500 to connect water mains with Blue River.

Middleport, N. Y.—City will expend $45,000 for construction of water works and $25,000 for sewer system.

Greensboro, N. C.—City is considering construction of steam plant at pumping station; City Commissioners will secure plans and specifications.

Fremont, O.—Citizens will vote July 11 on $54,000 bonds for water main extensions and for fire department improvements.

Malvern, O.—Citizens will vote on $15,000 bonds for installation of water works.

Altus, Okla.—Citizens have voted $5,000 bonds for deep well.

Bartlesville, Okla.—E. T. Archer & Co. Consulting Engineers, Beals Bldg., Kansas City, Mo., are preparing plans for installation of water works; estimated cost, $250,000.

Waynoka, Okla.—Bids will be received until about July 15 for material for the construction of water system and electric light plant.—William Haviland, Alva, Engineer.

Allentown, Pa.—Specifications are being prepared for 12,000,000-gal., horizontal, cross-compound pumping engine.

Henrietta, Tex.—Citizens will vote July 15 on $18,000 bonds to build dam across Little Wichita River.

Melissa, Tex.—Melissa Water Works Co. has been formed to install water works.—W. S. Wysong is interested.

Olney, Tex.—Citizens have voted to issue water works bonds.

Palacios, Tex.—Citizens have voted to issue $18,000 bonds for construction of water works system.

Eureka, Utah.—Fire and Water Committee is considering specifications for proposed concrete reservoirs.

Richmond, Va.—Committee on Water has rejected all bids received for installation of pumps.

Heights, W. Va.—Town has voted $6,000 bonds for construction of a water works system.

Vancouver, B. C., Can.—Citizens have passed following by-laws: $100,000, Seymour water system extension; $75,000 for water system improvements and $60,000 for D. L. 301 water system improvements.

Windsor, Ont., Can.—Ratepayers will vote July 24 on $50,000 by-law to provide new intake and extensions.

CONTRACTS AWARDED

Chico, Cal.—By Trustees to Chico Construction Co. for constructing 25,000-gallon reinforced concrete fire cistern near the Normal School at First and Sycamore Sts., $1,037.

Colorado Springs, Col.—Furnishing the materials and performing the labor necessary for extension of water mains; work includes furnishing and laying about 63,785 ft. of c.-i. pipe, 4 ins. to 6 ins., including about 43 tons of special castings; alternate bids were also received for 16-in., also 12-in. steel pipe; 143 gate valves and boxes; five hydro-electric remote controlled, 12-in. valves; five 12-in. pressure reducing valves; 53 tons of pig lead; two tons of calking hemp; 20 manhole covers; constructing 20 manholes; laying pipe, to J. Schwartz, Colorado Springs; furnishing steel pipe, Hendrie & Bolthoff, Denver, Col.; specials, to J. B. Clow & Sons, of Chicago, Ill.; valves and c.-i. pipe, to American Cast Iron Pipe Co., of Kansas City, Mo.; estimated total cost, $113,000.

Housatonic, Conn.—By Housatonic Water Co., to A. J. Hason to furnish and lay about two miles of 8-in. water pipe from Van Deusenville to Housatonic over the North Plain rd.; contract calls for over 300 tons of c.-i. pipe and fittings; to E. H. Shaw, of Van Deusenville, for trench work.

Chicago, Ill.—Furnishing and laying water service pipes by the Board of Local Improvements, Chicago; S. Lincoln st., W. Madison st., S. Morgan st., W. 37th pl., to Daniel Hardin, 3139 Indiana ave.; Vincennes rd., to David Walsh, 6628 So. Chicago ave.; Sawyer ave. System, to Jas. J. Renn, 367 W. Chicago ave; furnishing boiler tubes to the bureau of engineering, to John Mohr & Son, 349 Williams st., $4,000; to McLaughlin Building Material Co., 145 La Salle st., the contract for furnishing sand to the bureau of engineering, $1,090.

Oelwein, Ia.—Laying about 3300 ft. of water mains to R. C. De la Hunt, Cedar Rapids.

Duluth, Minn.—To John A. Johnson to construct 5,000,000-gallon reservoir for middle system on Thirteenth St., between Second and Third Aves. East, about $40,350.

Good Thunder, Minn.—Construction of a new steel tower and tank to replace the present frame structure to Chicago Bridge & Iron Works, Chicago, Ill., $4,162.

Hastings, Neb.—To Fleming & Ockinga, city, to provide a well at the water works under guarantee of flow at 34,000 gallons per hour.

Newburgh, N. Y.—Complete laying of 30-in. water main from Washington Lake to West st., to Hallock-Angle Co., Inc., Wilkins Bldg., city: Pipe in trench, $7.97; pipe in tunnel, $7.97; excavation below grade, $2.99; rock in trench, $4.99; rock in tunnel, $14.47; timber, $65; air valve chambers, $69; concrete, $9.93.

Central Point, Ore.—By Council for extension of the water system to the Jacobson-Bode Co., $12,000.

Fort Myer, Va.—Additions to the pumphouse and other work in connection with the water system: To R. E. Boiseau, Washington, D. C., for addition to pumphouse, $2,860; to James Nolan & Sons, Washington, D. C., new filter, new filter pump, resetting old filter pump, etc., $6,375; to L. B. Jacobs, Newark, Del., for constructing new 10-in. water main, $27,446.

La Crosse, Wis.—Constructing extension to water works system, requiring 34,325 lin. ft. 6 to 24-in. pipe, 92,000 lb. of special castings, 109 valves, 6 to 24 in.; setting 24 and the removing of 10 old hydrants; constructing reinforced concrete piers and abutments for carrying a 16-in. water pipe across La Crosse River and taking up and relaying in different locations 5975 ft. 6-in. pipe to Thos. E. Wooley, city, $33,157.

LIGHTING AND POWER

Alexander City, Ala.—Industries Light & Power Co. has been organized to construct dam to generate electricity for town supply.

Dothan, Ala.—Citizens will vote on bonds to construct electric light plant and water works; has plans and specifications for power house costing about $75,000.

Susanville, Cal.—Town Trustees have granted Lassen Electric Co. a franchise to erect electric transmission lines for the distribution of electricity within the corporate limits of town.

Mountain Home, Ida.—Council has granted L. L. Nunn & Co. right to build power lines in the city.

South Bend, Ind.—The Indiana & Michigan Electric Co. is considering $100,000 expenditure for underground conduit work. —F. A. Bryan, Manager.

Kansas City, Kan.—Plans are being prepared by McLaughlin Engineering Co., Room 507, Reliance Bldg., Kansas City, Mo., for proposed municipal electric light plant and distributing system; estimated cost is $350,000.

Ness City, Kan.—Fire has destroyed building which housed electric light and ice plant.—J. C. Hopper, principal owner.

Kansas City, Mo.—McLaughlin Engineering Co., Kansas City, has been elected to take charge of the engineering work in connection with construction of municipal electric light plant and distributing system; $350,000 has been appropriated. Plans and specifications will be completed within 20 days.

Springfield, Mo.—Federal Light & Traction Co. is having plans prepared for doubling capacity of plant.

Omaha, Neb.—Whether city shall do its street lighting with gas under municipal operation or whether the contract shall be awarded to some independent concern is being considered by Council.—Charles F Crowley, Gas Commissioner.

Reno, Nev.—The Nevada-California Power Co., Tonopah, is considering construction of a 4000-hp plant on Trucker River.

Atlantic City, N. J.—Council has passed ordinance providing $37,000 bond issue for electric light standards on Boardwalk.

Barker, N. Y.—Village Trustees have granted the A. F. Sweet Electric Light & Power Co., Medina, franchise to light village.

Binghamton, N. Y.—Council will consider ordinance calling taxpayers' election to determine whether $25,000 bonds shall be issued for purpose of constructing conduits on Court St., placing all overhead wires except the trolley wires underground and establishing boulevard lighting.—E. A. Fitzgerald, Electrical Engineer.

Olean, N. Y.—Public Service Commission has received a petition from the Olean Electric Light & Power Co. for order authorizing the issue of $185,000 bonds; proceeds are to be used for the construction and equipment of electric power station at Sears, building a high-tension transmission line from Sears to city of Olean, making improvements to its present distributing system in city of Olean, additional distributing line to the city of Allegany, acquiring and installing new arc-lighting system in city of Olean and for refunding of present mortgage indebtedness.

Gastonia, N. C.—Spencer Mountain Power Co. will rebuild electric plant destroyed by fire; loss, about $20,000.

Columbus, O.—Before city can extend street lights to recently annexed territory on North and South sides, two new substations must be erected and machinery installed to carry current to these parts of city.

Grove, Okla.—Town has voted on $35,000 bonds for installation of electric light plant and water works.

Shawnee, Okla.—Shawnee Gas & Electric Co. will rebuild power plant destroyed by fire; loss, about $150,000.

Halsey, Ore.—Oregon Power Co. has been granted franchise for construction of lighting system.

Harrisburg, Pa.—Following electric companies have been chartered with $10,000 capital each: Story Electric Co., Norwegian Township; Sharswood, Rush Township; Mitchell, Mahanoy Township; Taney, East Norwegian Township; Marshall, Blythe Township; Eldon, Rahn Township; Fearne, Schuylkill Township; Gibson, Ryan Township, all of Schuylkill County; Backs Electric Co., Stroud Township, and Kent, Smithfield Township, of Monroe County. Following with $5,000 capital each. Washington Union Electric Co., East Washington Smith Township, North Strabane Township, South Strabane Township, North Franklin Township, South Franklin Township, Robinson Township, Houston, Morris Township, Chartiers Township, Canton Township, Cecil Township, Amwell Township, Pleasant Valley, Mt. Pleasant Township and Burgettstown, all of Washington, Washington County; Oak Borough Electric Co., North Fayette Township, South Fayette Township, Findley Township and Collier Township, all of Oakdale, Allegheny County; Canonsburg Union Electric Co., Canonsburg; Washington Township Electric Co., Franklin Township and East Waynesburg, of Waynesburg, Greene County.

Meadville, Pa.—Northwestern Pennsylvania Ry. Co. is considering purchase of one 300-kw. rotary converter and one 300-kw. motor-generating set.—C. L. Murray, General Manager.

York, Pa.—The Pennsylvania Light & Power Co. is preparing to add 3 ft. to height of its McCall's Ferry dam in Susquehanna River.

Conconully, Wash.—Franchise to construct and operate electric light plant and water works system has been granted to J. C. Morton.

CONTRACTS AWARDED

Russellville, Ala.—By city to W. W. Moore, Birmingham, to construct electric light plant and water works; work will be under supervision of Edgar B. Kay, University of Alabama, Tuscaloosa, Ala.

Springfield, Ill.—Constructing addition to the lighting station at Tenth st. and Capitol ave., for Springfield Light, Heat & Power Co., to Daniel Evans Constructing Co., St. Louis, Mo.; estimated cost, $25,000.

Ishpeming, Mich.—Council, acting on recommendation of Board of Public Works and Electric Light Committee, has decided to accept the proposition made by W. H. Yates, of this city, for Allis-Chalmers Co., of Milwaukee, covering improvements necessary to put the municipal electric light plant in first-class condition; work will proceed at once.

Omaha, Neb.—Furnishing 1400 hoods and lamps to T. W. Miner Co., New York, $7.50 each; 1300 controllers to Iron Sponge & Controller Co., New York, 55c. each; gas will be purchased from Omaha Gas Co.

Richmond, Va.—Electric motors, switchboards and wiring for electric light plant to Westinghouse Electric & Manufacturing Co.

FIRE EQUIPMENT

Little Rock, Ark.—National Board of Fire Underwriters has made following recommendations: Central fire station, one new hose company, one new engine company one reserve engine and hose wagon, one coal wagon, chief's auto, first-size engine for central company and engine company No. 4, extra first-size engine in reserve, 75-ft. quick-raising aerial truck for central ladder company, auto-combination hose wagons for new engine and hose companies and Hose Co. No. 5, reserve hose wagon for central station loaded with 1200 ft. of 3-in. hose and fitted with a turret pipe.

Preston, Ida.—Volunteer fire company has been organized.—A. W. Stephen, Chief.

Chicago, Ill.—Mayor Harrison has signed ordinance authorizing Fire Marshal to purchase 13 automobile fire engines without bids at cost not to exceed $2,950 each.

Toluca, Ill.—Council has ordered purchase of 1000 ft. of fire hose and hose cart similar to one now in use.

Indianapolis, Ind.—Board of Public Works will at once adopt plans and specifications for erection of three new fire engine houses, for which Council has appropriated $95,000.

Wichita, Kan.—Fire Chief A. G. Walden has recommended purchase of 4000 ft. of fire hose and auto engine.

Monroe, La.—City will at once purchase combination chemical and hose wagon; also will erect two fire stations.

Boston, Mass.—City is considering the construction of an engine house at Oak sq., Brighton District.—Charles D. Daly, Fire Commissioner.

Belleplaine, Minn.—Purchase of hook and ladder truck is being considered.

Rockport, Mo.—Citizens have voted to erect $8,000 fire house.

St. Joseph, Mo.—Bids will be asked by Board of Public Works for two motor cars.

Lincoln, Neb.—Bids will be asked for combination hose and chemical auto; 1200 ft. of fire hose and 300 ft. of chemical hose, together with 10-gallon chemical tank.

Omaha, Neb.—Citizens have defeated proposition to erect fire house.

Elizabeth, N. J.—Plans submitted by Architect Louis Quien for fire houses at High and Port Sts., Third St. and Irvington Ave. and Prince St. have been adopted by Joint Committee.

Hopewell, N. J.—Fire Department has been organized.—F. I. Sutphin, Chief.

Trenton, N. J.—Fire Board has decided to purchase 1000 ft. of fire hose.

Barberton, O.—Fire, Water and Sewer Committee will secure estimates on the cost of purchasing combination auto truck.

Fremont, O.—Citizens will vote July 11 on $54,000 bonds for fire department improvements and water main extensions.

St. Johns, Ore.—Fire Commissioners will purchase 3 hose carts and 1000 ft. of hose.

Philadelphia, Pa.—Director Clay has asked $3,500 appropriation for auto for Fire Marshal and $4,000 for combination auto and hose cart.

Norfolk, Va.—Bids have been rejected by Board of Control for erection of fire station at Williams ave. and Twelfth st.; new bids will be asked.

Strasburg, Sask., Can.—Ratepayers have passed by-law to purchase fire apparatus to cost $5,000.

Windsor, Ont., Can.—Ratepayers will vote July 24 on $17,000 by-law to purchase auto apparatus for Fire Department.

BRIDGES

De Witt, Ark.—Arkansas County will construct 12 bridges during 1911; several levees will be widened and strengthened; corrugated iron culverts to be placed at each crossing.—L. C. Smith, County Judge.

Chicago, Ill.—Mayor Harrison has signed the ordinance appropriating $360,000 for construction of new Washington St. bridge and bids will be advertised for at once.

Elkhart, Ind.—Elkhart County Commissioners will soon let contract for construction of new bridge at Wakamsa, bridge over Yellow Stone, in Concord Township, and for repair of several bridges in city.

Michigan City, Ind.—County Commissioners have decided to erect bridge across the Kankakee river; cost about $6,000.

St. Paul, Minn.—Reinforced concrete bridge will be erected over Great Northern right of way at Lexington Ave.

Hernando, Miss.—De Soto County is considering construction of viaduct at Twenty-fifth Ave.; cost, about $150,000.

Meridian, Miss.—City is considering construction of viaduct at Twenty-fifth Ave.; cost, about $150,000; plans prepared.

Philadelphia, Pa.—Survey Bureau has plans for 28 bridges, estimated to cost $45,000 bonds for developing river wall.

Woonsocket, R. I.—City Engineer Frank H. Mills is preparing plans of bridge on Bernon st.

St. Marys, Ont., Can.—Citizens have voted $5,000 bonds for constructing Wellington St. bridge.

CONTRACTS AWARDED

Pine Bluff, Ark.—By Jefferson County to M. S. Hasie, Jr., Dallas, Tex., to construct three concrete bridges on Camden Road, $3,475.

Bridgeport, Conn.—By Public Works Director Kenny for constructing concrete culvert on North Ave. at Island Brook to Contractor Michael Noonan, lowest bidder, $2,995; other bidders, Strueli & Puckhafer, Bridgeport, $4,032; Toole & Sunderlin, Bridgeport, $4,617; F. M. Brown, F. W. Brown Waterproofing & Concreting Co., New York, $3,250; B. D. Pierce, Jr., Co., $3,987; work will be begun upon culvert at once.

Paxton, Ill.—Construction of six reinforced concrete bridges in Patton Town-